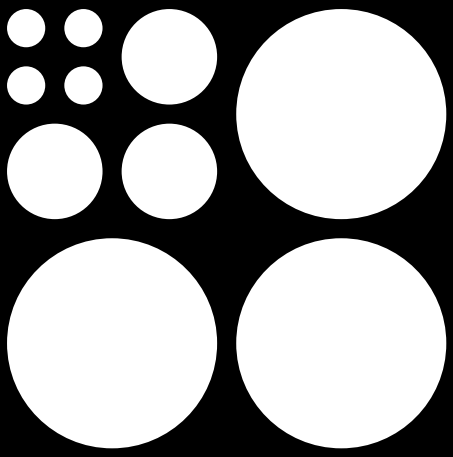
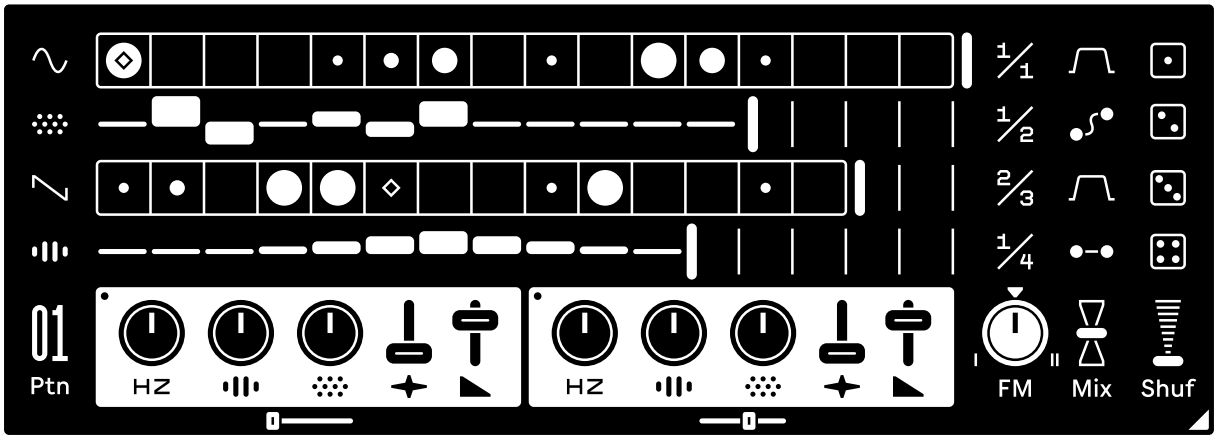


Dyad
User guide

Contents

Introduction



Dyad is a two-voice percussion synthesizer and sequencer inspired by analog hardware instruments. Each voice has an identical set of parameters modulated by the sequencer– which becomes an integral part of the sound design process.

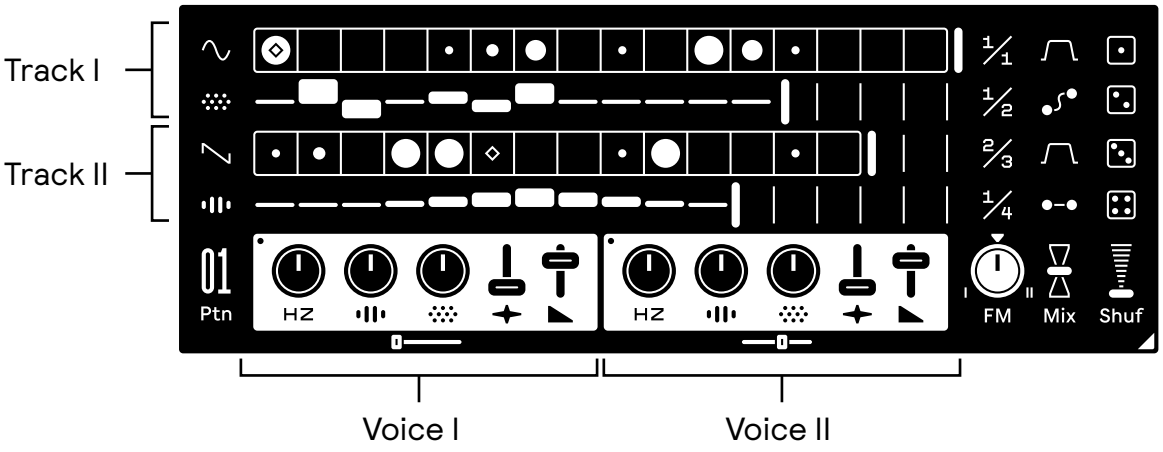
The voices interact with each other using FM synthesis- creating a layered element where even a simple pattern can sound complex as the two voices dance.

Keeping Live's eco system in mind, every parameter outside of the sequencer can be modulated and automated, expanding Dyad's capabilities as you wish.

... And with a full Push integration, you can even leave your computer behind.

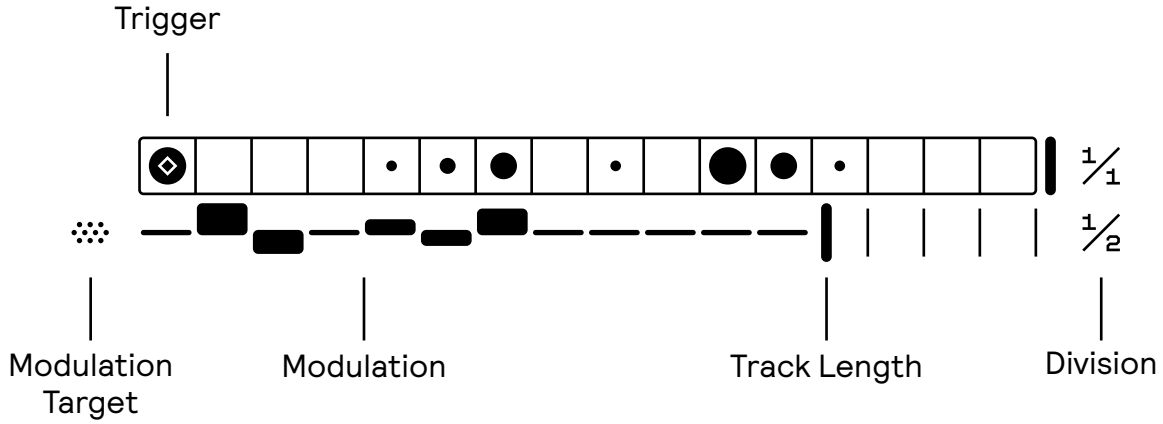
Layout & Overview

Dyad is based on two identical synthesizer voices, each controlled by separate sequencer tracks. The sequencer is laid out vertically while the voice controls are laid out horizontally underneath.



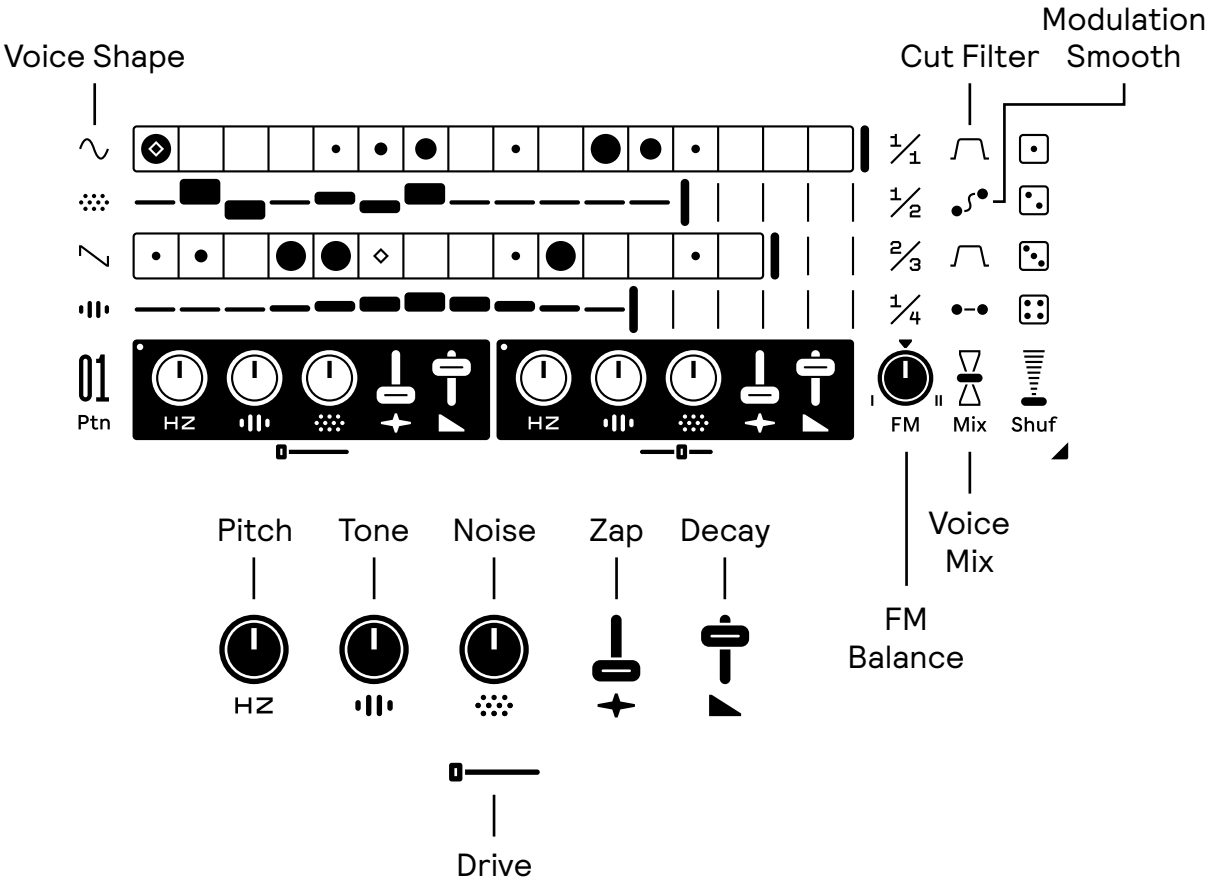
The sequencer has both a trigger (top) and modulation (bottom) track with individual length and tempo division. The trigger track sends velocity and note-on to the voice while the modulation affects the main five voice parameters.

Each parameter has a separate modulation lane with a shared track length.

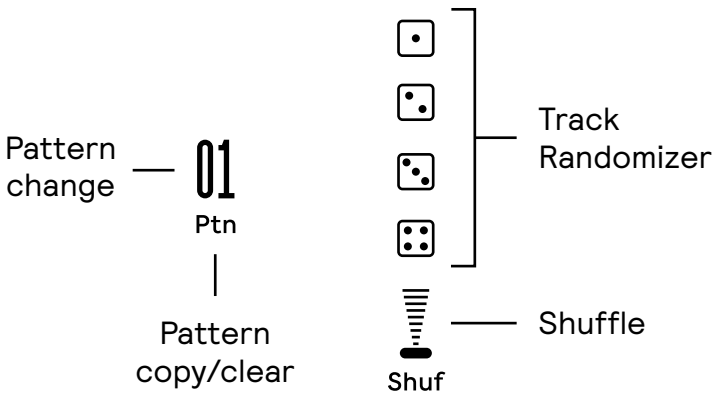


The sequencer controls above are all stored in the pattern, which means that they cannot be automated or modulated but are recalled with pattern changes.

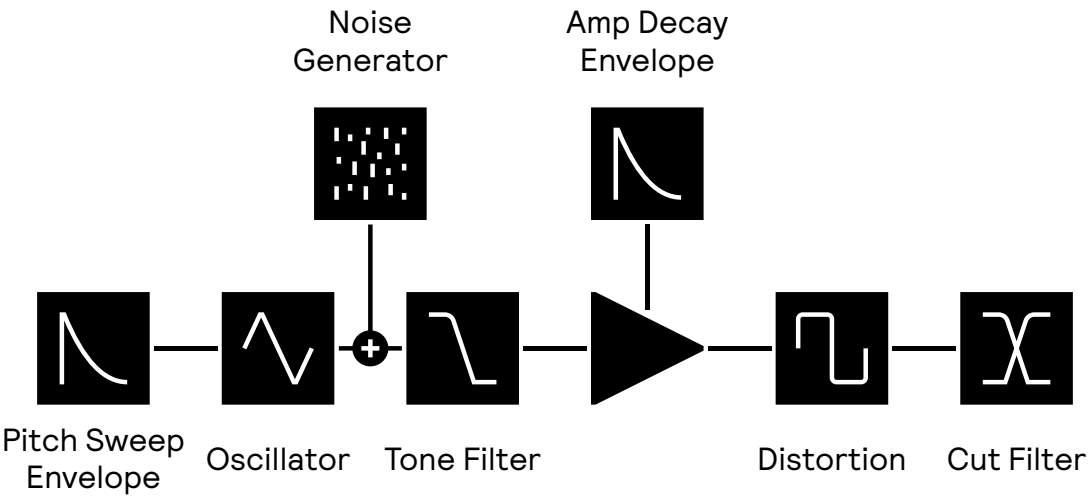
Conversely, the voice controls are all stored in the device preset and remain the same across pattern changes. This means that they can be automated and modulated alongside the sequencer.



The overall sequencer has a couple of overarching controls that are all automatable and modulatable as well.



Synth Voice



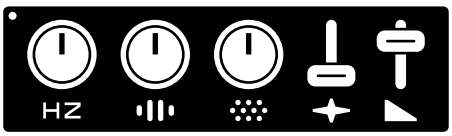
The synth voices in Dyad use a type of virtual analog synthesis with thru-zero linear FM and variable waveshapes. It's configured as a simple one oscillator voice inspired by vintage analog percussion synths, with an emphasis on utilizing the sequencer modulation and bi-directional FM for sound design.

The oscillator is mixed with a noise source and then sent through a 4-pole lowpass filter which has a natural contouring response from the amp envelope. This means that it will "pluck" the sound the lower its set. Both components are sent into a distortion effect for subtle coloration or complete mayhem.

Lastly, a DJ-style cut filter is used to attenuate either high or low frequencies.

Combining two of these voices with the sequencer, letting them FM one another with different rhythms and modulation, opens up for deep sound exploration.

Synth Voice



The two voices feature five main parameters that can be modulated by the sequencer, each corresponding to a specific element in the synthesizer voice.

HZ Hz – sets the frequency of the oscillator.

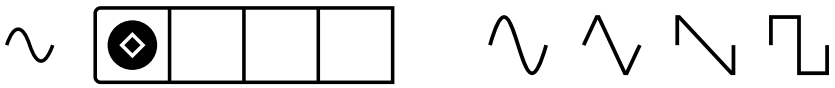
Tone - controls the lowpass filter cutoff frequency.

Noise - controls the balance between the oscillator and noise generator.

Zap - controls the intensity of the pitch envelope.

Decay - controls the decay time of the amp envelope.

Each voice has a distortion effect which can be controlled using the slider underneath the main control panel.



Dyad also has four waveshapes to choose from- Sine, Triangle, Saw and Square. The waveshape is selected by changing the Shape setting next to each voice's Trig track.

The final output of the voice gets sent through a DJ-style cut filter which can be used to remove either high or low frequencies from the sound.

The oscillators in Dyad feature thru-zero linear FM, which can be used to create all sorts of interesting textures and tones by combining different waveshapes.

FM

The FM balance in Dyad affects which voice is being modulated by the other. The oscillator of each voice is always routed to the linear FM input of the other, and by turning the dial from the center point towards either I or II, it will increase the modulation depth received by the oscillator in that voice.

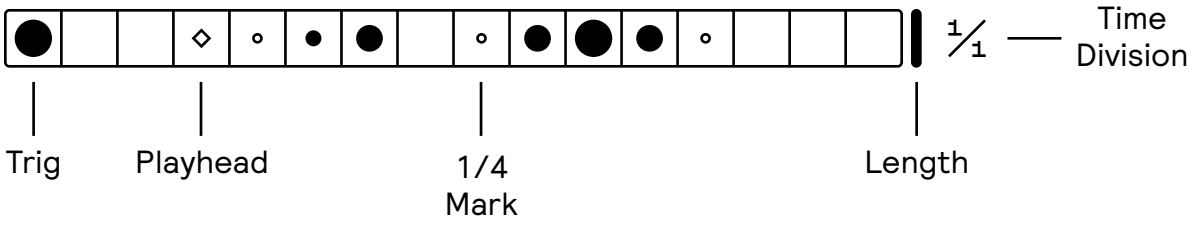
Mix

Mix controls the balance of the voice outputs which lets you put more emphasis on one voice over the other, or completely remove one of them. Voice I is at the top while voice II is at the bottom.

Sequencer

Each voice in Dyad is controlled by two different sequencer tracks– Trig and Modulation. The Trig track behaves much like a classic step sequencer, sending trig and velocity data, while the Modulation track is used to send values to each of the five main parameters of the synthesizer.

Each track has up to 16 steps with different length and time division allowing for both polymeters and polyrhythms. Patterns can also be chained and switched instantaneously for longer sequences.

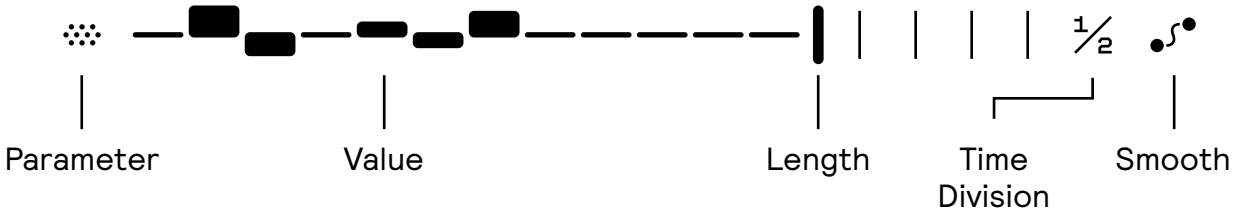


Trigs are added or removed by clicking on any step container. It's also possible to click and drag to add multiple steps at once.

Holding down Shift ⇧ while adding a trig will cycle through three different velocity levels, which are displayed by the size of the circle.

Clicking and dragging the Length horizontally will change the track length.

Time division changes the rate that the sequencer will advance at, set in divisions of the host tempo.



Modulation is applied by clicking and dragging the bars in the Modulation track. Each parameter has its own modulation lane and by clicking on the parameter menu you can choose which parameter's modulation is currently being edited.

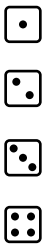
Holding down **Shift** ⇧ while editing will increase the precision and edit each step's relative value which is useful for fine tuning the modulation.

Holding down **Alt/Opt** ⌥ while editing will set the modulation to zero.

To copy and paste a modulation value, hold down **Ctrl/Cmd** and click to copy, then hold down **Ctrl/Cmd + Shift** to paste.

Sequencer

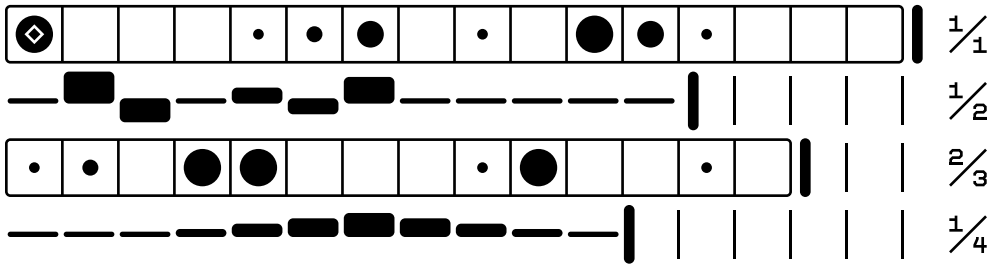
The modulation on each track can be interpolated, meaning that instead of the modulation being stepped it can slide between each value. By adjusting the Smooth parameter the interpolation amount will increase.



Each sequencer track can be randomized by pressing the dice button next to it. On the Trig track this will place random triggers across the pattern while on the Modulation track it will generate a range of values. Randomization can also be automated for a sort of generative approach.

Shuf increases the amount of global shuffle and affects all sequencer lanes. Shuffling always occurs on every other step from the host timeline.

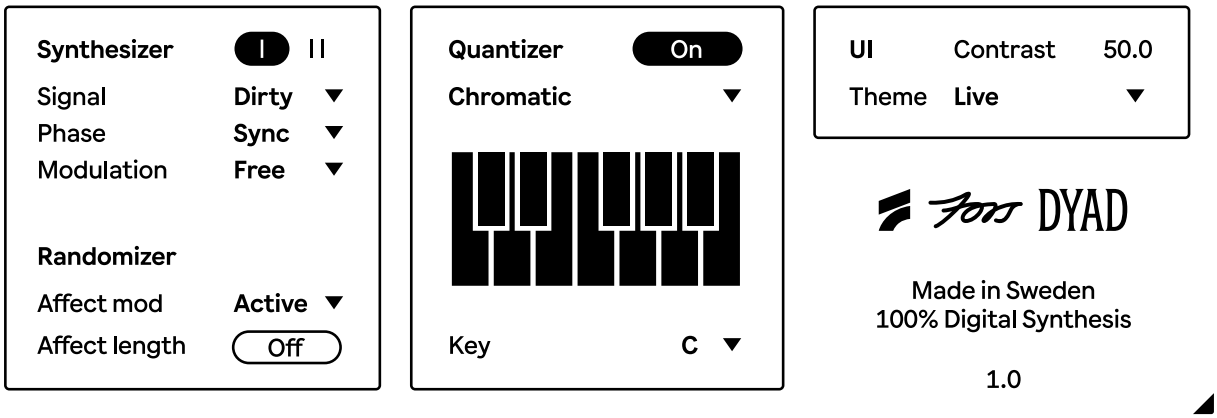
One Dyad instance contains 32 unique patterns. Pattern switching is instantaneous, automatable and modulatable. This means that you can use it in unconventional ways like applying an LFO to the Pattern parameter.



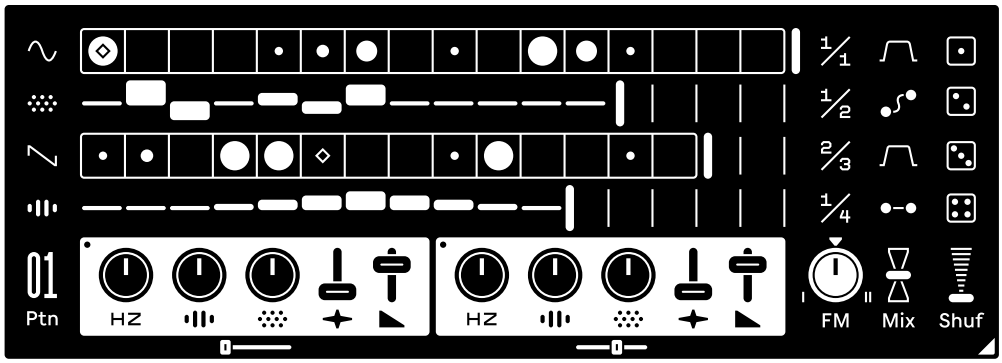
The controls above are what is stored in a Pattern. Trigger & modulation data, track length and time division are all stored and recalled with the Pattern. This also means that they are not externally controllable from e.g automation or modulation.

All the other parameters in Dyad are therefore global, meaning that they are stored in the device preset and can be automated, modulated etc. This allows for a very flexible structure where you can mix the internal sequencer modulation with external control such as LFOs etc.

Clicking the Ptn label will open the Copy/Paste/Clear menu which lets you perform these Pattern operations.



Dyad has a few settings that change the behavior of the sequencer and synthesizer voice etc. The settings view can be toggled by pressing the Triangle button in the bottom right corner of the device.



Toggle
Settings View

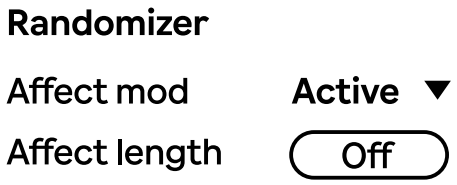
The synthesizer settings change how the synth voices sound and respond to modulation. Each voice is individually configured by pressing the top buttons.

Signal toggles between a clean and dirty signal path. While subtle, the dirty setting introduces noise and distortion depending on the dynamics of the voice and sounds more like you would expect analog gear to behave.

Phase toggles between resetting the oscillator phase per trigger (sync) or to keep it free running. A synced phase results in a more consistent onset and is suitable for percussive sounds.

Modulation changes how the sequencer modulation is received. When set to Free, it always receives modulation as soon as the modulation track advances to the next step. However, if set to Latched it receive and hold the modulation when the voice is triggered.

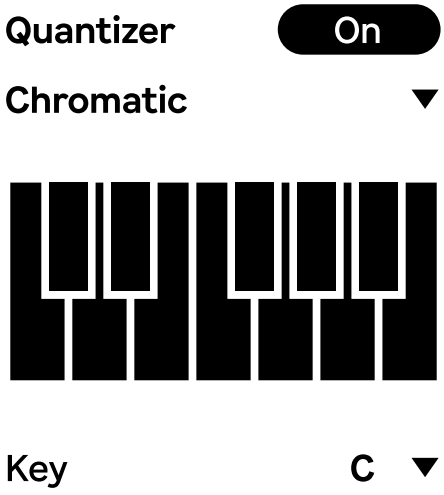
When the second voice (II) is selected there is a fourth option "**Hz**", which lets you Link the second voice frequency to the first, this is useful for layering the voices or creating intricate counter melodies. The modulation on the second voice will be applied on top of the first frequency.



The **Randomizer** settings change the behavior of the randomize buttons.

Affect mod selects whether the randomizer will randomize only the selected modulation parameter or all of them.

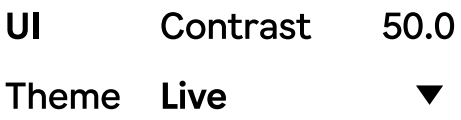
Affect length selects whether the length of the track will be randomized.



The **Quantizer** can be used to quantize the Hz (pitch) parameter of each synth voice to a specific scale. When enabled it will snap to the nearest key in the current scale.

To enable quantization, press the top button and select a scale in the menu underneath. The key of the scale can be changed with the Key option.

It's also possible to set a custom scale by toggling each keyboard key on or off.



The UI colors in Dyad can be changed from the default Live theme to a selection of built-in optional themes. You can also create your own theme by creating or changing a *dyad-usertheme.json* file. This is a standard json format file and should look like this:

```
{
    "bg" : "000000",
    "mid" : "555555",
    "light" : "999999",
    "accent" : "EEEEEE"
}
```

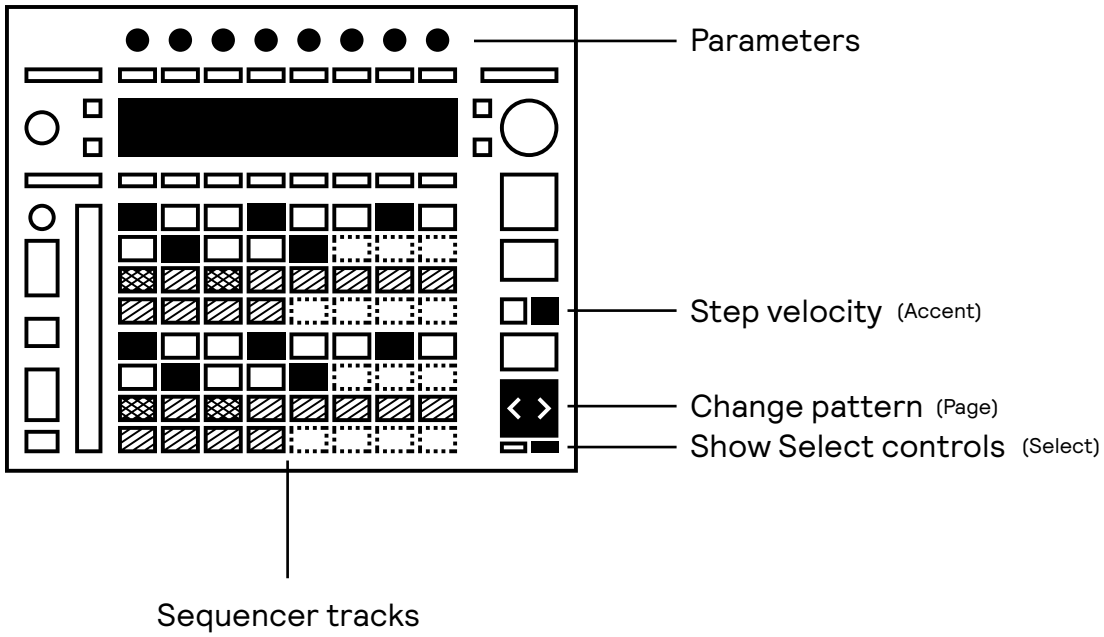
Colors are entered as hex codes and will be activated when the "User" option is selected in the Theme menu.

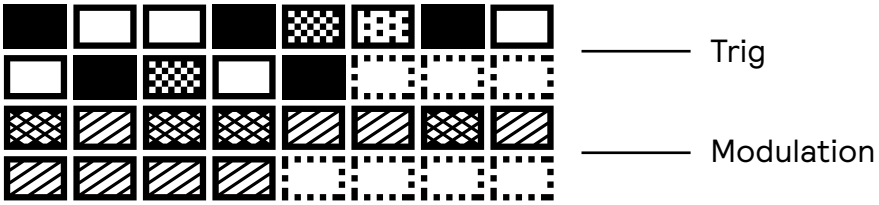
Note that changes to the custom theme requires a reload of Dyad or your project.

The **Contrast** option is active if the device is using the standard Live theme. This is useful if current theme is too low contrast or you simply want a higher contrast setting.

Push Integration

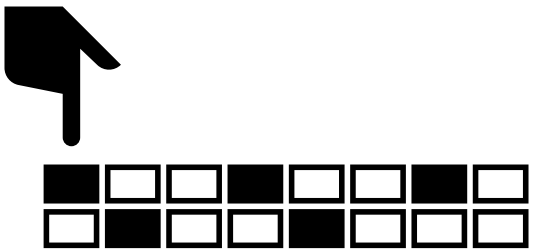
Dyad is programmable from a Push 2 or 3 in both control and standalone mode, this lets you create new sounds and patterns entirely from the Push hardware.



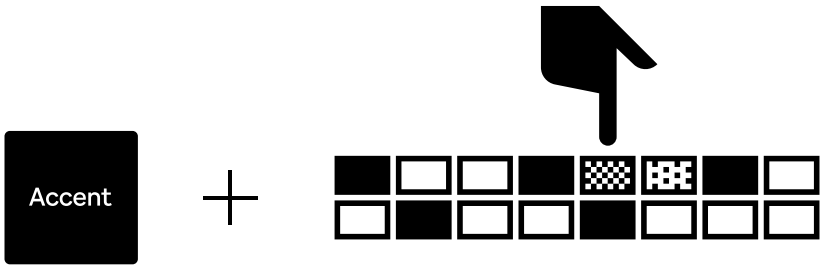


The sequencer tracks of each voice are displayed and interacted with using the pads. The top rows corresponds to the Trig track, with orange accents, while the bottom corresponds to the Modulation lane with purple accents.

Push Integration

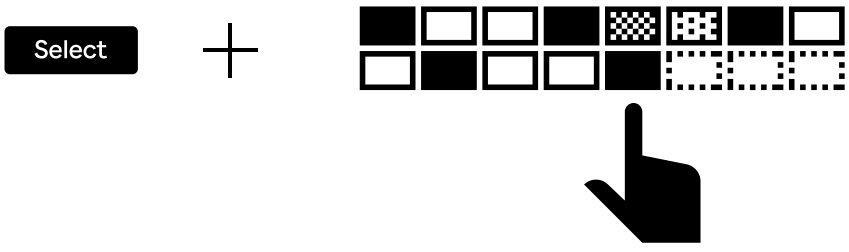


To add or remove a trig, tap or slide your finger across the pads. The pad will light up bright orange when it's active.

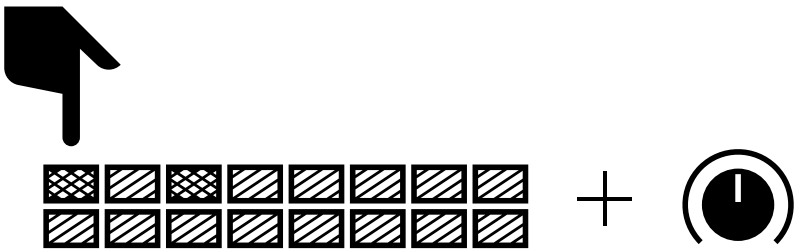


To change the velocity of a step, hold down the Accent button while tapping the pads. This cycles through the three different velocity levels.

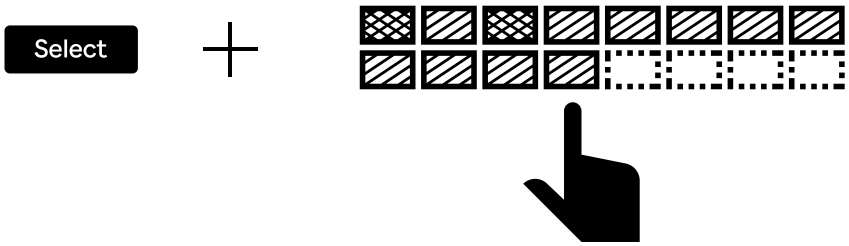
The pads will dim in darker shades of orange corresponding to the velocity level.



To change the length of a track, hold down the Select while pressing on the step that you want to be the last step. The lights will go dim on the excess steps.



To change the modulation level on a step, press and hold the corresponding pad and adjust the control dial (using the top encoders of the Push) of the parameter you want to affect. When modulation of any parameter is present on a step it will light up in a more vivid shade.



Just like on the Trig track, pressing Select and the pad where you want the track to end will set the length of the track. The lights will turn off on the excess steps.

Push Integration

As per usual, the parameters of the device will populate the Push controls on the screen and is categorized into Voice I, Voice II, Randomize, Scale and Config.

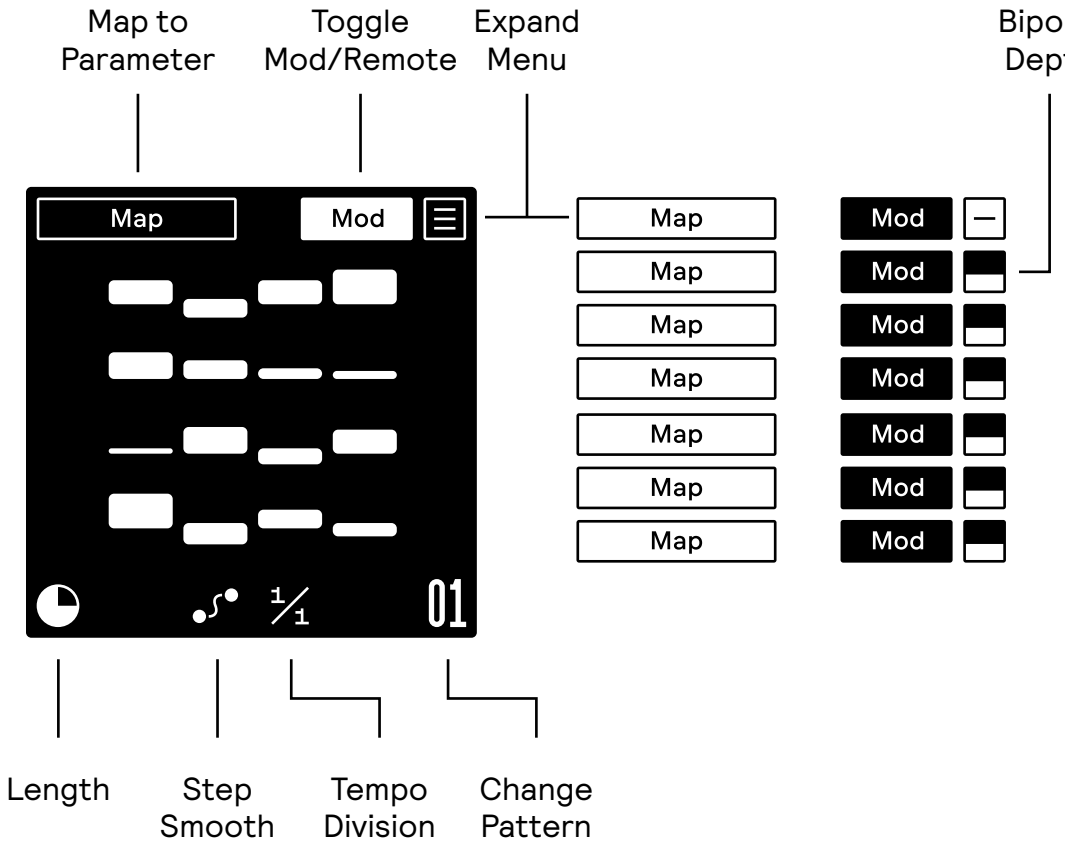
By pressing and holding the Select button the screen will instead display an alternate set of controls that gives access to shared parameters on any screen.

Pattern	Shuffle	FM	Mix	1/1 5/4 4/3 Trig I Div	1/1 5/4 4/3 Mod I Div	1/1 5/4 4/3 Trig II Div	1/1 5/4 4/3 Mod II Div

From the Select screen you can change the Pattern, set Shuffle amount, control the Voice Mix and FM Balance as well as change the time division of each track. The Pattern can also be changed using the Page buttons, which will also briefly display the active pattern.

Modul Device

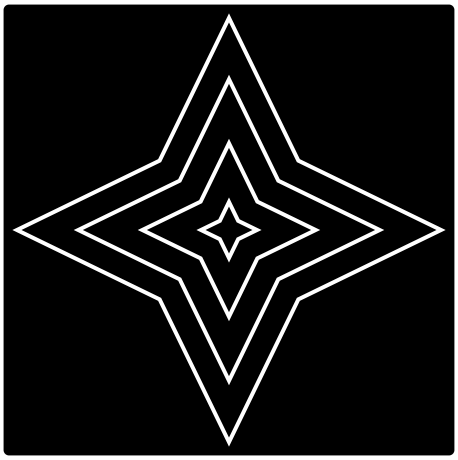
Modul is a modulation device with the modulation sequencer from Dyad and can be used to extend the modulation in Dyad, or to modulate an external device in Live.



Length and Tempo division is stored in each Pattern while all other parameters are stored in the device preset. Modul has up to 16 patterns per device.

Jolt Device

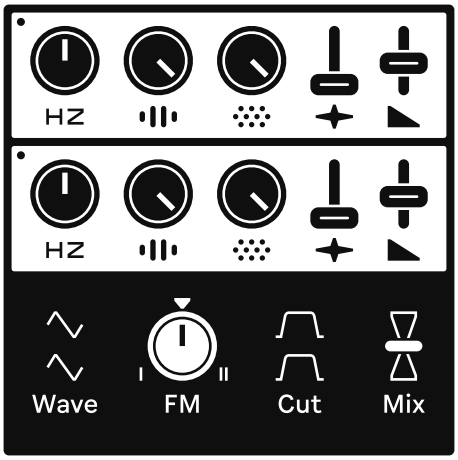
Jolt is the distortion from Dyad packaged as a standalone stereo effect device. It has only one parameter, Drive. Put it on a track and increase the drive until it hurts.

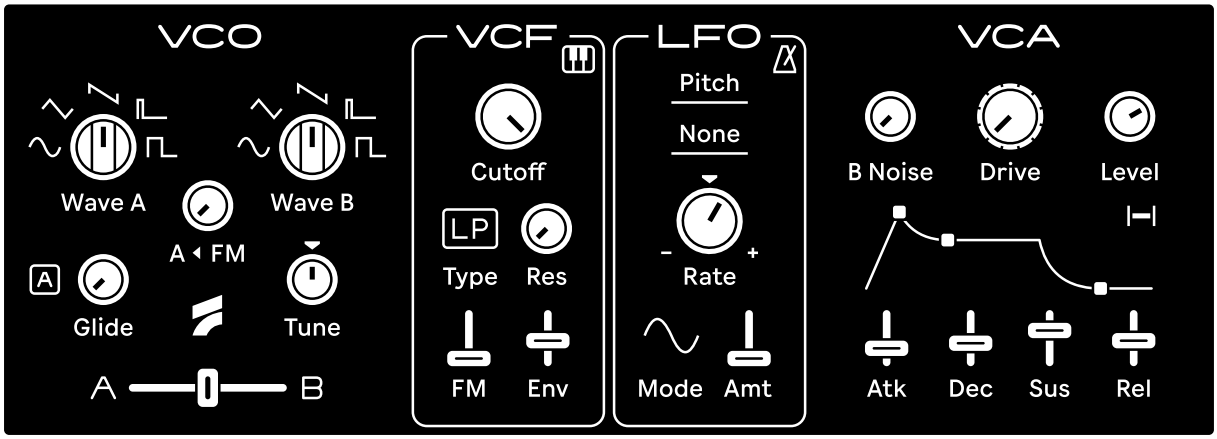


Ditto Device

Ditto is the synth section from Dyad broken out into a drumsynth. It lets you play the two Dyad synth voices like a traditional percussion synthesizer and is a perfect match for a drum rack.

The synth voice and its controls are identical to Dyad.





Para is the sister synthesizer to Dyad. Based on the same virtual analog core, it expands on the oscillator's functionality and frames the components in a classic monosynth setting that puts focus on the directness and simplicity of its controls.

To learn more about Para, please see the Para user guide.

This concludes Dyad,
we hope you enjoy using it.

Ess Mattisson
Felisha Ledesma

Fors
2024