

Drambo

User manual

v1.11

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Introduction

Thank you for choosing Drambo, the modular groovebox and audio processing environment!

Drambo is what you want it to be: A music creation studio, modular playground, sequencer, synthesizer, sampler or audio processor. It supports all iOS devices, screen orientations and forms.

Standalone modular groovebox
Compose music, perform and build synths



AUv3 instrument in a DAW
Use Drambo as a synthesizer or effect



MIDI sequencer
Sequence hardware synthesizers or AUv3 instruments in an AU host.



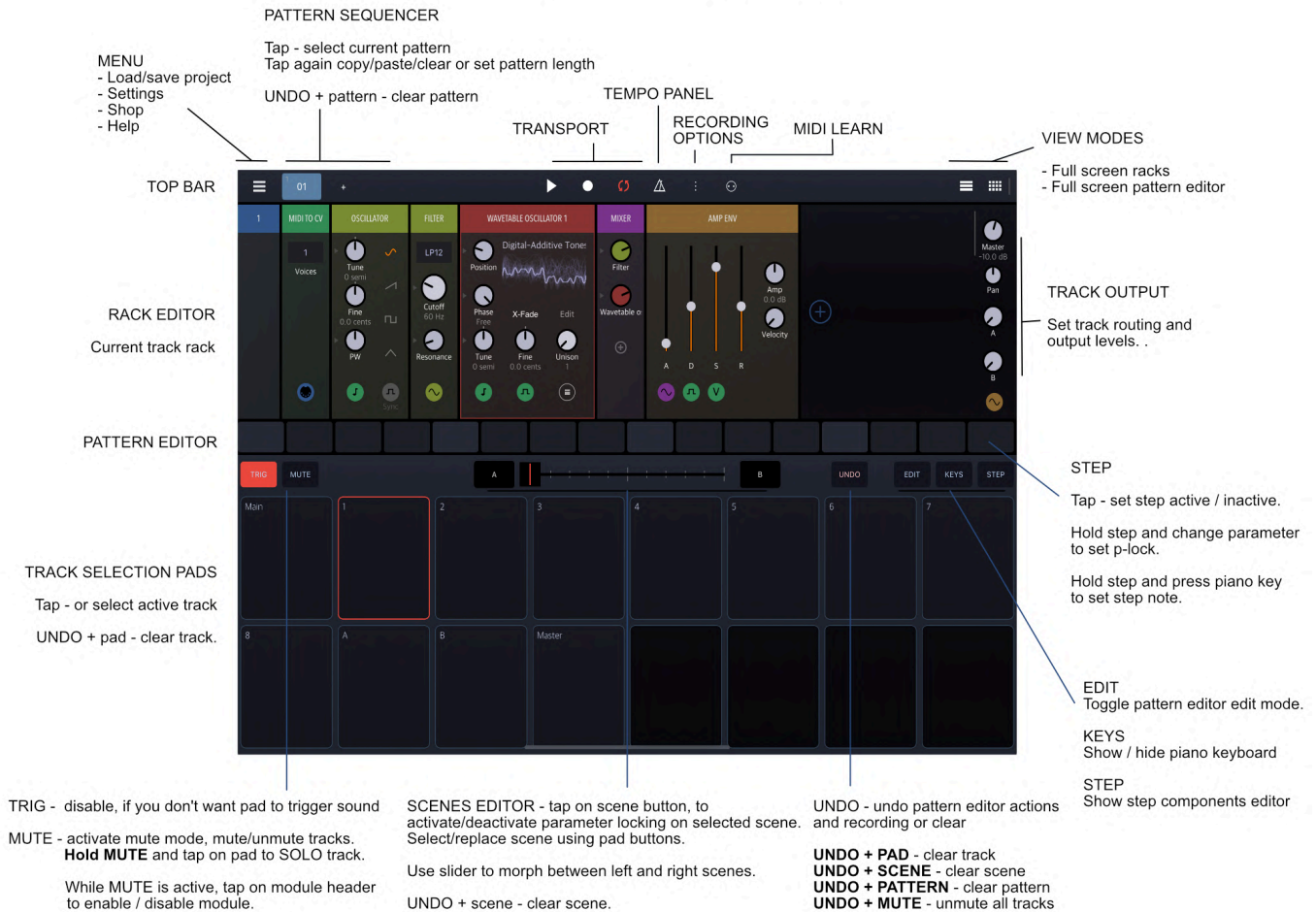
AUv3 effect / MIDI effect in a DAW
Process audio using built in effect modules or just make own



These are just the most typical use cases, feel free to do anything you like :)

Main interface

MAIN SCREEN OVERVIEW



The main screen is divided into 4 sections:

Top bar

- Main menu - load/save current project, bounce audio, settings and help
- Patterns editor - pattern chain of your song
- Transport - play / record / loop mode / tempo and recording settings
- View modes. Toggle extended fullscreen sequencer or rack view

Rack editor

- Shows rack editor for currently selected track

Pattern editor

- An Advanced step sequencer

Pads / control area

- Pads: trigger tracks and / or select current track
- Morph slider: morph parameters between 2 morph groups
- Edit button: toggle sequence edit mode
- Keys: Show / hide piano keyboard
- Step: Step components editor

General Concept

Before we start, make sure that you have some basic knowledge about sound synthesis and modular synths. If you don't, there are plenty of resources on the web, to start with.

As a groovebox, Drambo is a self-contained digital instrument for the production of live-, synth- and sample-based music with a high degree of user control facilitating improvisation. Other terms like "sequencer" and "drum machine" describe Drambo perfectly as well. If you worked with other grooveboxes you will find Drambo's interface quite familiar. It features pads, a steps editor and performance controls. What makes Drambo unique on this field is a powerful, yet easy-to-use, polyphonic step sequencer. Each step may hold different data, called step components: Musical notes, parameter locks (different parameter values for individual steps), sequencer actions (like jump to a different step instead of the next one) or conditions that make other step components behave according to a selectable set of rules.

This part of Drambo controls and sequences its heart: A modular environment.

What distinguishes Drambo from other modular systems?

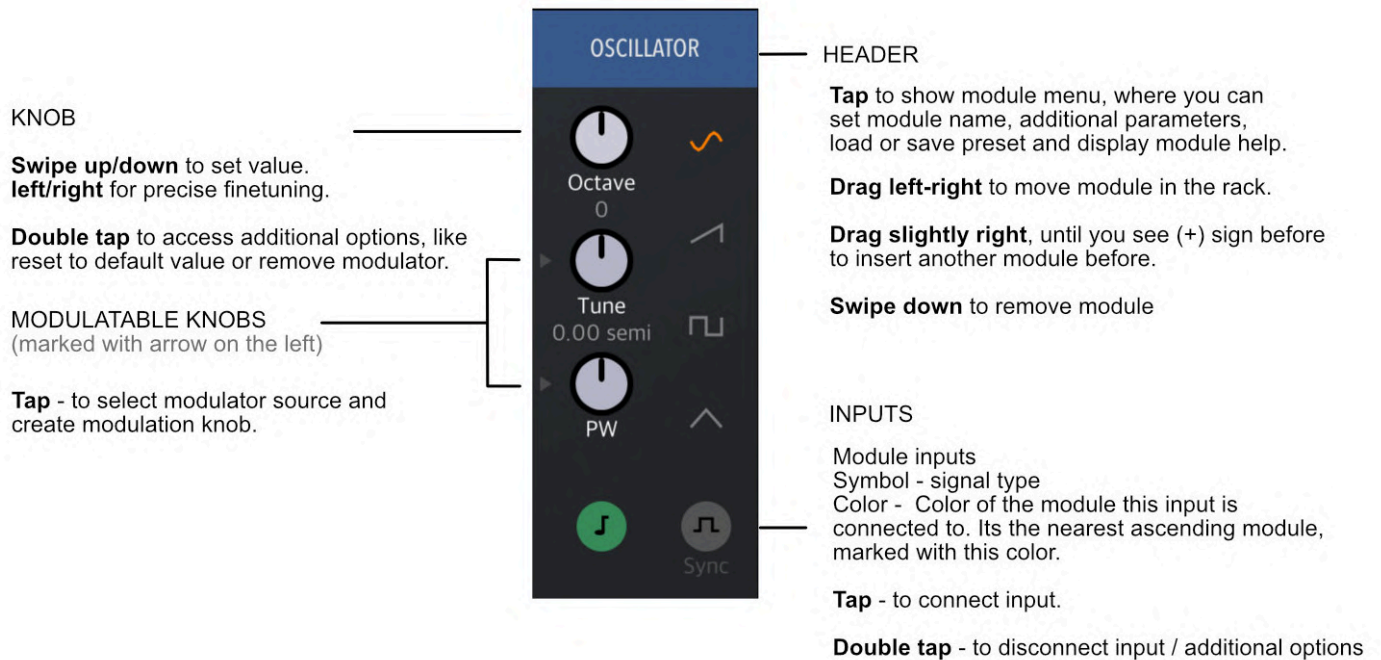
- Drambo doesn't use cables but rather color coding and a dynamic user interface.
- Drambo connects modules automatically whenever possible
- Directional flow. Signals flow from left to right and from top to bottom. This helps keeping structure readable.
- Its stereo and polyphonic by default.
- Modules may house other modules. This keeps complexity under control.
- You can organize your patches in custom racks, e.g. Instrument rack and store as a preset.

Important!

When you start your own experiments, keep your ears safe and make sure device volume level is not too high. Its a modular environment and everything is possible, including enormous signal spikes.

Module

A Module is the basic building block in Drambo. It either generates signals on its own or processes incoming signals. There are over 120 default modules available in the library, divided into categories. You will find oscillators, filters, mixers, modulators, math modules, sequencers, MIDI processors and specific rack modules that hosts your custom racks.



Output sockets are visible only during the connection process.

Connections (cables) are distinguished by colors. Connected input sockets have the same color as the module they are connected to.

Tap on a header for additional module options like: name, presets, help, visibility. You can enable/disable (bypass) any module as well.

Connections and signals

Drambo features the following signal types:



AUDIO / modulation signal - carries sound and modulation signals. (-1..1)



MIDI - carries MIDI events



PITCH (1/8 per octave - 8 octaves in range of 0 to 1) (0..1)



GATE (0 or 1) - an on/off signal used to trigger envelopes and sounds. When you press a key, the gate opens and doesn't close until you release the key. (0..1)



VELOCITY - like an audio signal except that it carries key velocity level (0..1).



TIME - continuous signal that carries the current sequence position in beats. (0..64)

You can connect inputs with outputs of any type, with one exception: MIDI sockets. They can only be connected with other MIDI sockets.

All signals in Drambo are polyphonic and stereo by nature.

Polyphony and stereo information is propagated through connected modules. e.g. a Module that gets a polyphonic/stereo signal works polyphonically and outputs the same signal type.

TIP

In order to save CPU, if you don't need a polyphonic signal throughout your whole patch, use the **Poly to mono** module. Some modules marked with (1) do this by default (e.g. Reverb).

Modularity

Modules are organized in racks. Some modules may contain other modules in their internal racks. e.g. Track, Instrument rack, Delay rack.

Signals flow from left to right and then to succeeding racks. If you want module B to be modulated by module A, make sure A is located before B.

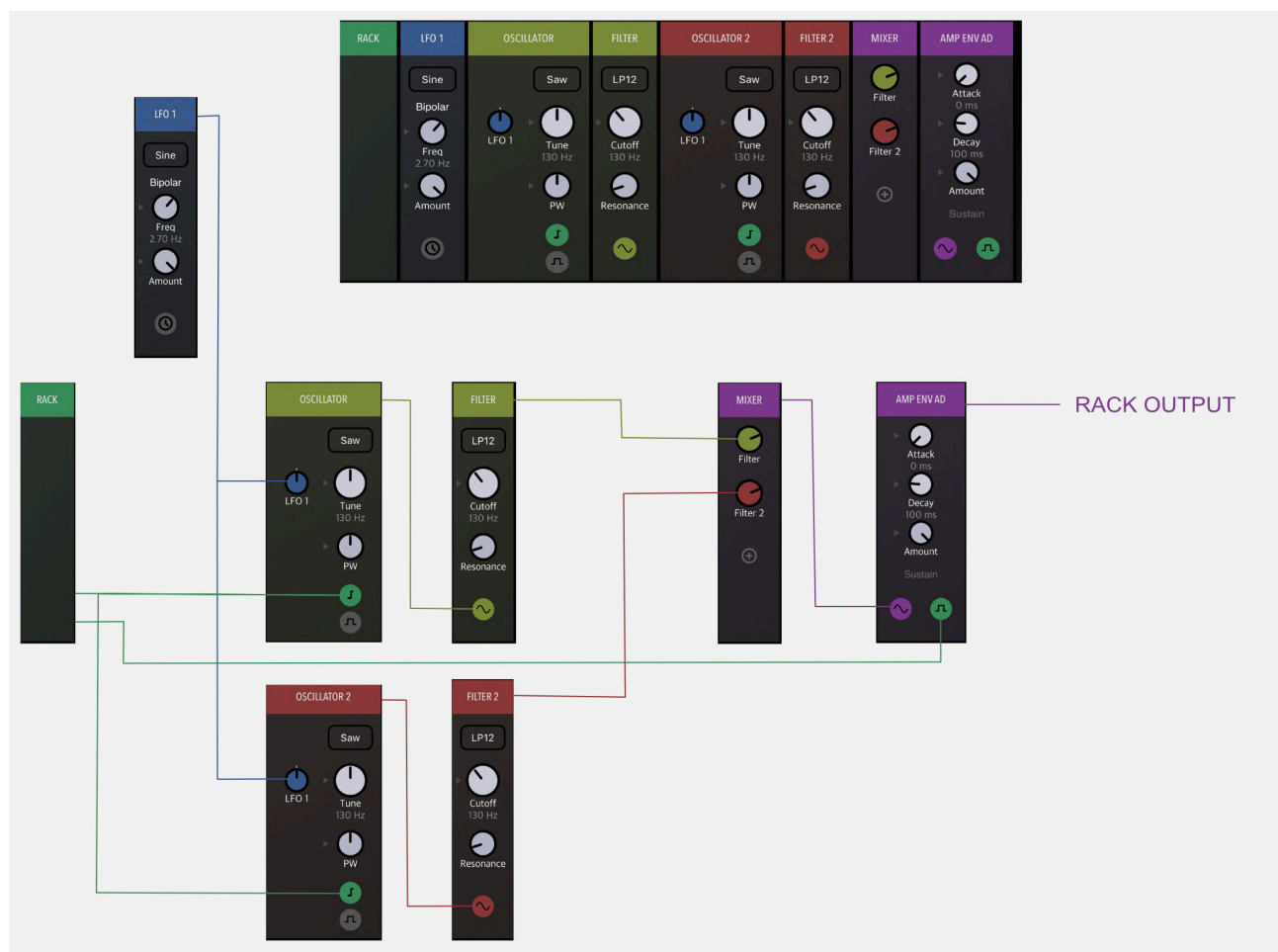
Connections are color coded. Module input has the same color as the module it is connected to. Colors are managed automatically.

Knobs with a small triangle symbol on the left are modulatable. For each modulation source connected to a knob, a new modulation amount knob appears.

When you insert a new module, required input ports are automatically connected according to ascending modules and signal type. You can change connections later.

Module output ports are visible only during the connection process.

An example rack with corresponding structure. Take a look at sockets and modules colors and how they express signal flow.



There are no instant feedback routings in Drambo. This helps keeping modules well organized and allows you to have up to 8 polyphonic stereo voices in the rack :). You may achieve delayed feedback by using e.g. the Delay rack module or use modules that offer functionality that is commonly achieved by using instant feedback loops.

Around Drambo in 80 beats

This short tutorial will guide you through all crucial Drambo features.

Important!

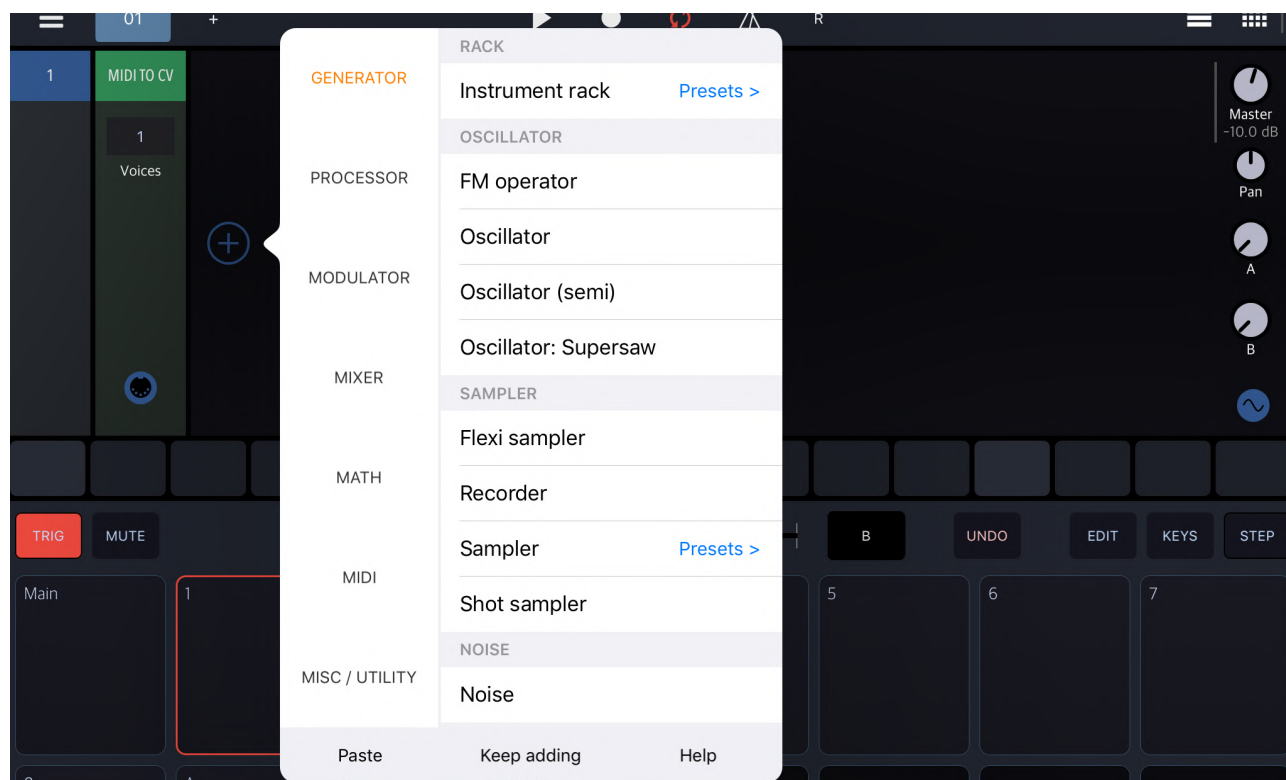
When you start your own experiments, keep your ears safe and make sure volume level is not too high. Its a modular and everything is possible, including enormous signal spikes.

Make a synth

- Tap on pad 1 to select the first track.
- Tap on the (+) button to add the first module.

You will see the modules browser open. Modules are divided into categories and sub categories.

- Tap on "Oscillator (semi)



Now our rack contains a constantly buzzing oscillator.



We need to control the volume envelope.

→ Tap (+) again and select "Amp env ADSR" from the PROCESSOR / AMP section.
Bravo! You've just made your first synth.

Did you notice that when you added modules, Drambo connected them for you automatically?



Now let's take a look at existing connections.

What you see is an internal rack hosted by Track 1 module. (Yes, Tracks are modules too!). The blue bar on the left is the rack internal output and configuration section. Then we have MIDI to CV module, that converts track MIDI signal to corresponding CV outputs: gate, pitch and velocity. Then we have the Oscillator module (light green). Its pitch input (with note symbol) is green, that means that it is connected to the pitch output of the first green module on the left, which is the MIDI to CV. So the oscillator pitch is controlled by MIDI to CV pitch output.

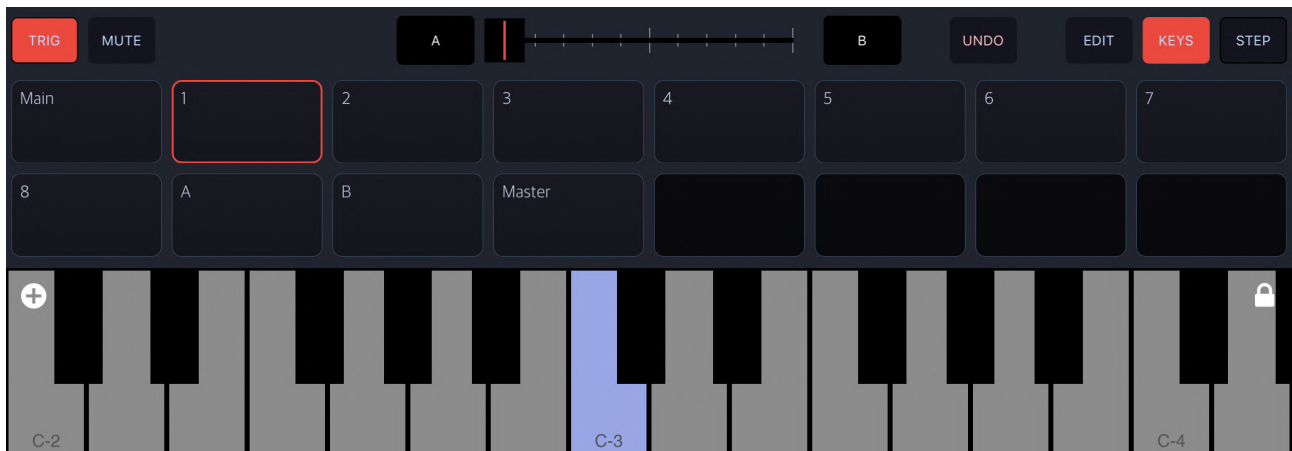
→ Tap on the Oscillator pitch input. You see the blinking output socket to which the input is connected to. You can tap on another input to change the connection, but we'll leave it like this for now.

Then we have Amp ENV 1. It has the same color as the Oscillator which means that its main input (audio) is connected to the Oscillator. Amp ENV gate and velocity inputs are blue because they are connected to corresponding track output sockets.

An essential concept in Drambo's design is the automatic connection of modules when they're added: Whenever you add a new module, Drambo will try to connect its input(s) to the respective output(s) of previous modules on the same track.

Drambo will never auto-connect a module's input to the output of a subsequent module.

You can play your synth by tapping on the current track pad, but let's use an on-screen piano keyboard, tap KEYS button to make this happen.

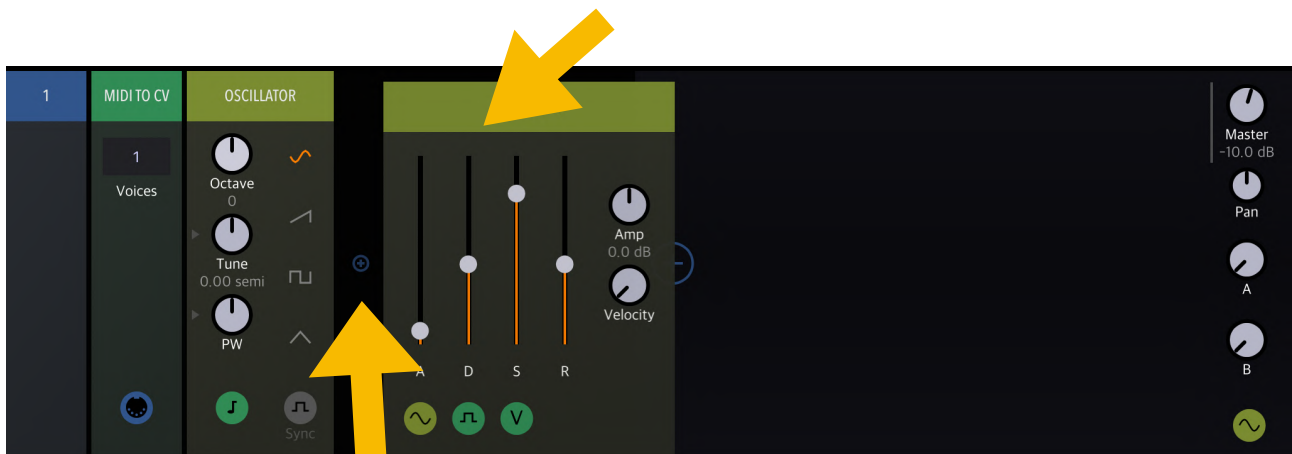


Change oscillator type to SAW - let it buzz.

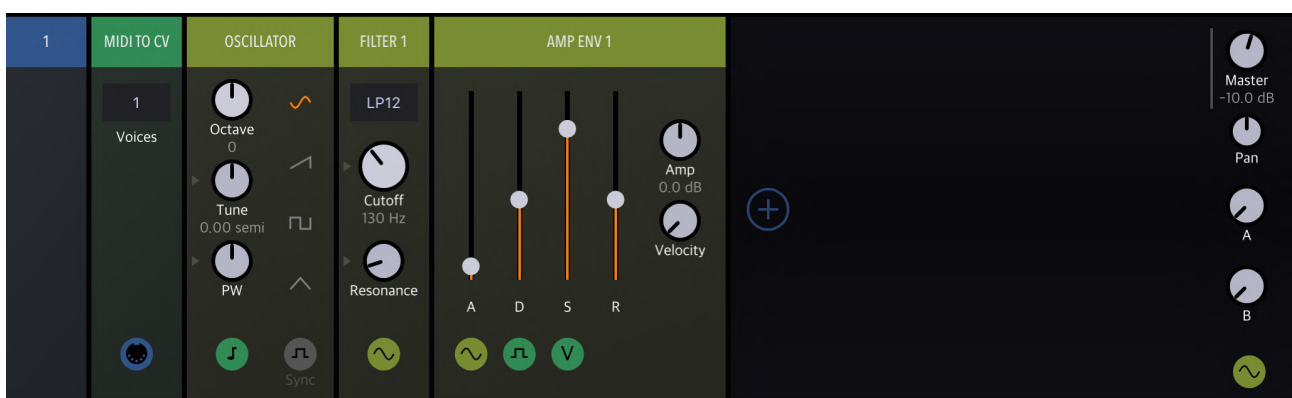
Let's add a filter module. We want the filter before AMP env 1.

To insert a new module between others, drag one module's header until you see a gap with a blinking (+) sign between them.

Slide AMP ENV 1 module header slightly right, until you see a blue (+) sign blinking in a gap, raise your finger.



Now select Filter module from PROCESSOR / FILTER section of library browser.

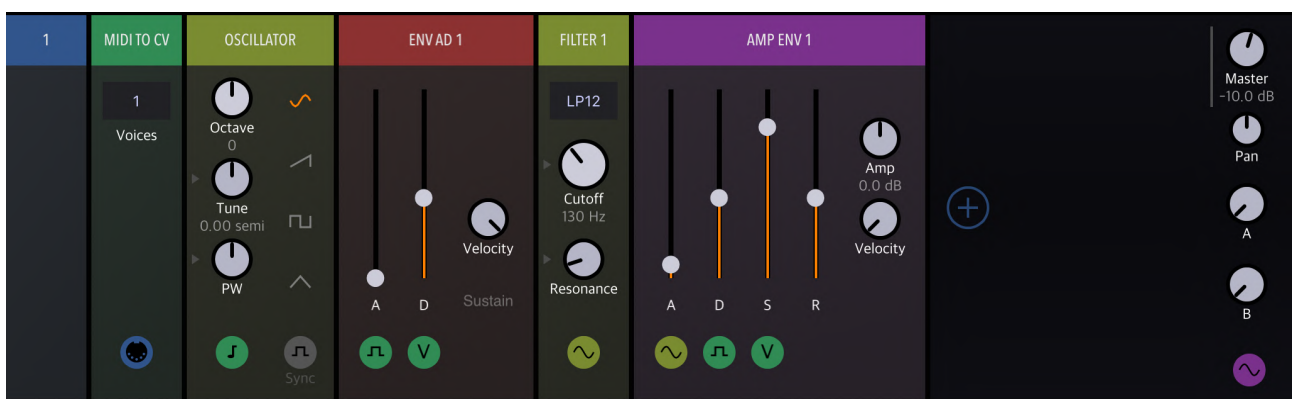


You've just inserted a filter between oscillator and amp env 1 and Drambo made all necessary connections for you.

Play with filter cutoff and resonance. You can select different filter types, but let's just use LP12 for now. (A Low Pass filter with 12db/octave roll-off).

Let's modulate the filter with an Envelope generator.

Using the same gesture, insert Env AD module from the MODULATOR / ENVELOPES section, between Oscillator and Filter modules.



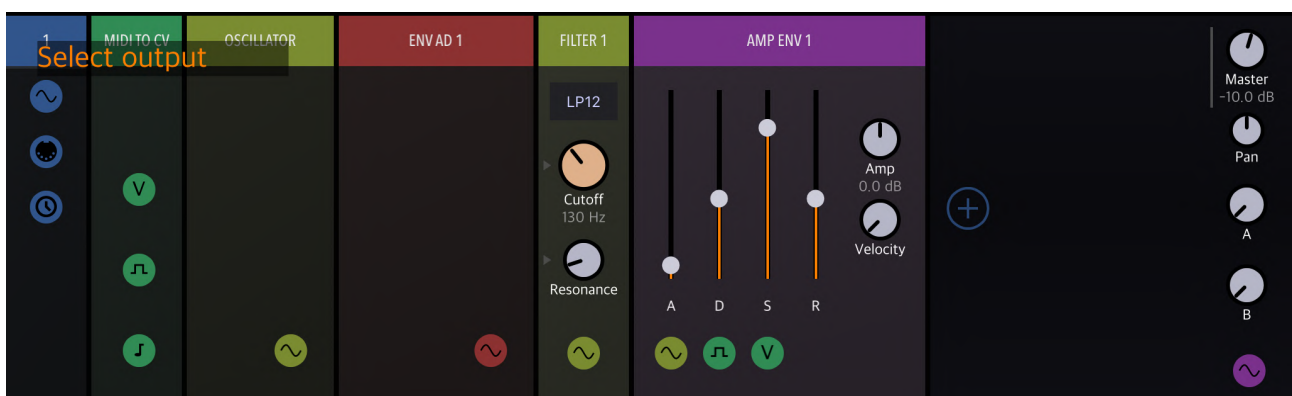
It still sounds the same. Why?

The newly added ENV AD modulator module is violet and you see no violet inputs, so our modulator is not connected to anything.

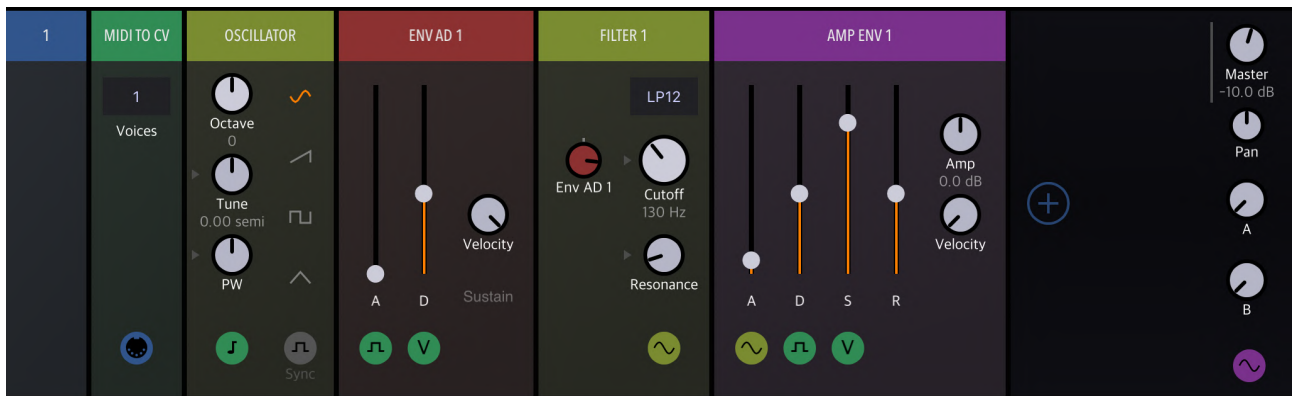
We want the Filter Cutoff knob to be modulated by ENV AD module. Knobs with a triangle symbol on the left are modulatable.

→ Tap on the filter's "Cutoff" knob to connect a new modulation source.

The Drambo interface now switched to connection mode. All modules that can be connected changed their appearance and also show available output sockets.



Tap on the ENV AD output socket. A new modulation knob has been created for the Filter Cutoff parameter. Using this knob you set the Env AD -> Cutoff modulation amount.



If you want to cancel output selection, tap on the source knob again.

If you want to remove a modulation knob, double-tap on it and choose "Remove".

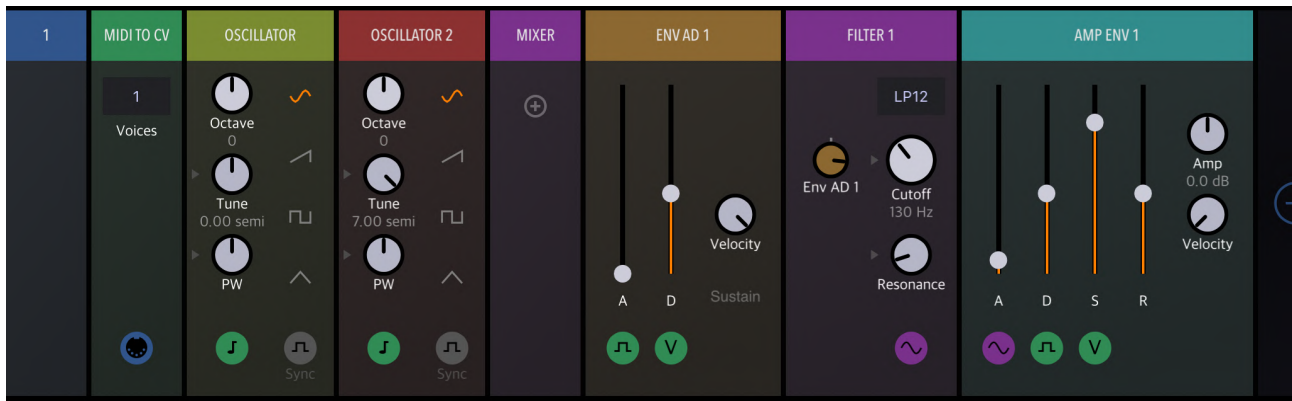
Lets add a second oscillator!

Insert Oscillator (semi) between Oscillator and Env AD

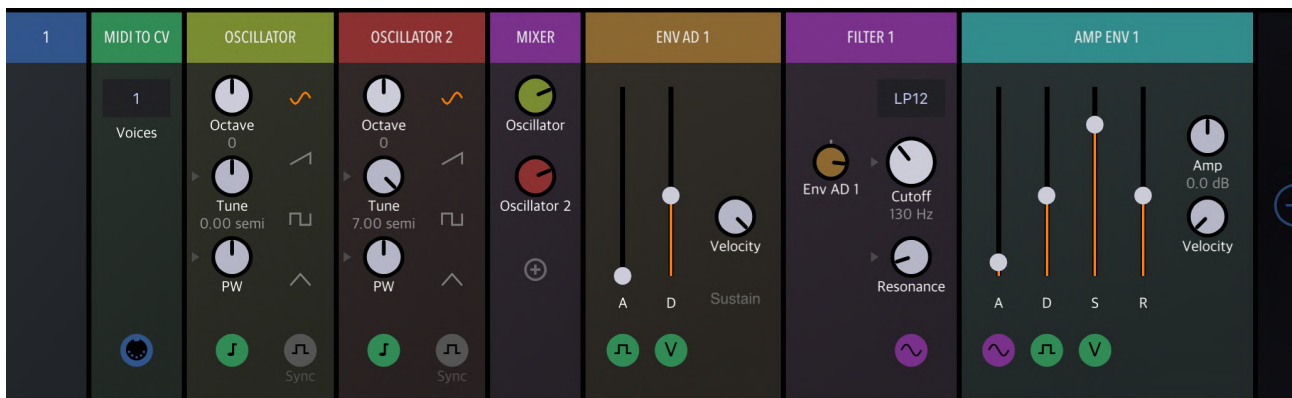


Detune them a bit using the Octave and Tune knobs. You will notice that you hear only Oscillator 2. We don't see green inputs, so nothing is connected to the first Oscillator.

Drambo doesn't know if we want to ring-modulate, frequency-modulate oscillators or just mix them. We want to mix their outputs, lets insert the Mixer module from the MIXER category.



Now we hear nothing. Drambo connected the Filter output to the mixer and the mixer is not connected to anything. Tap on the (+) symbol on the mixer, then select the output of the Oscillator, then do the same for Oscillator 2.



Both oscillators are connected to the mixer. You can control their levels using the corresponding knobs.

If you want to remove a source from the mixer, double tap on the input knob and select "Remove".

So far so good. We have a basic 2 oscillator subtractive synth with the filter!

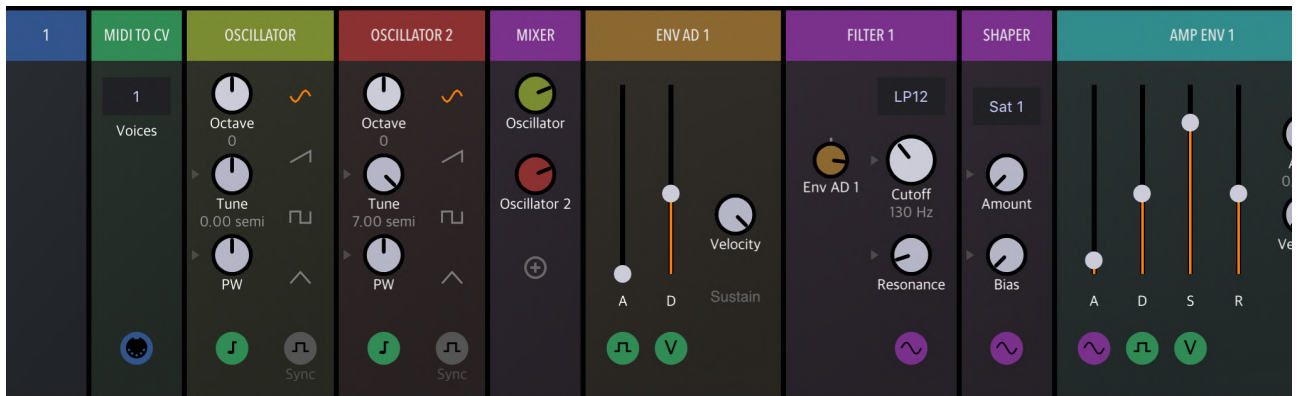
Lets make it polyphonic!

Set instrument polyphony to e.g. 3

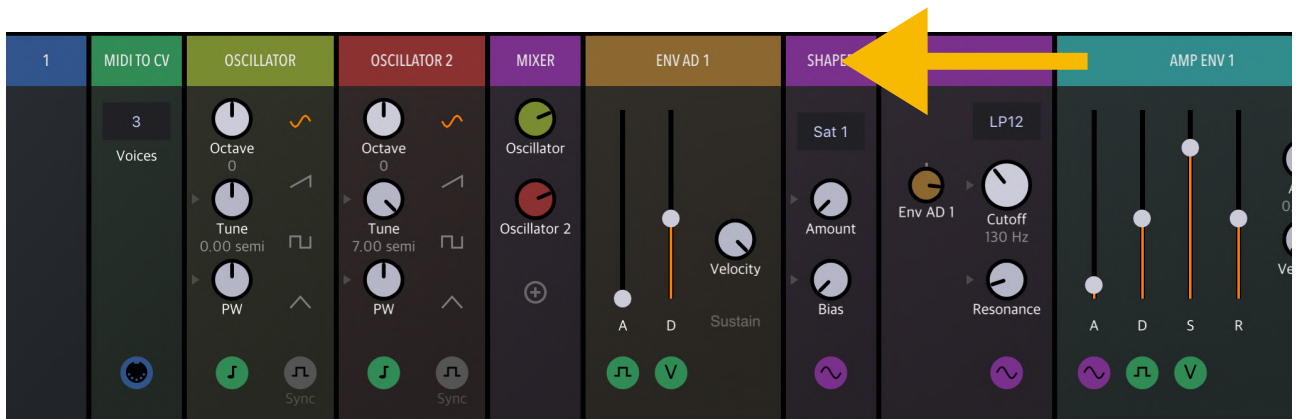


Voilla!

Lets spice this up and add some distortion. Insert PROCESSOR/SHAPER Shaper module at the end and play with amount knob.



Are you curious how it would sound if you move the Shaper module before the filter? Put your finger on Shaper module header and drag it before the filter.



To remove filter (or any module) put your finger on its header and swipe down until it disappears.

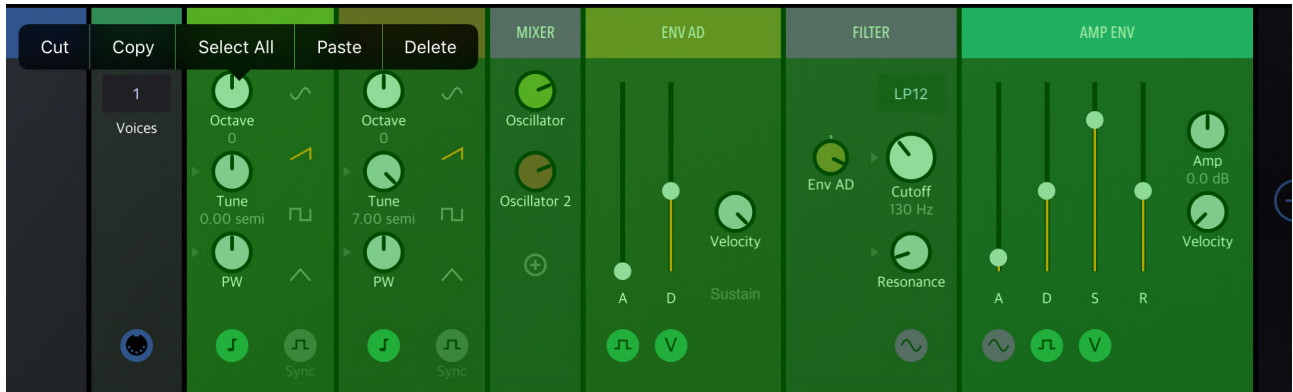
Tap on module header for additional options and help.

Double tap on a knob for additional options, like: Reset its value to default, set a numerical value or remove a modulator knob.

Let's save our synthesizer as a preset so that we can reuse it later.

To simplify later re-use of creations, you can use Instrument rack.
So let's wrap our existing patch in an Instrument rack.

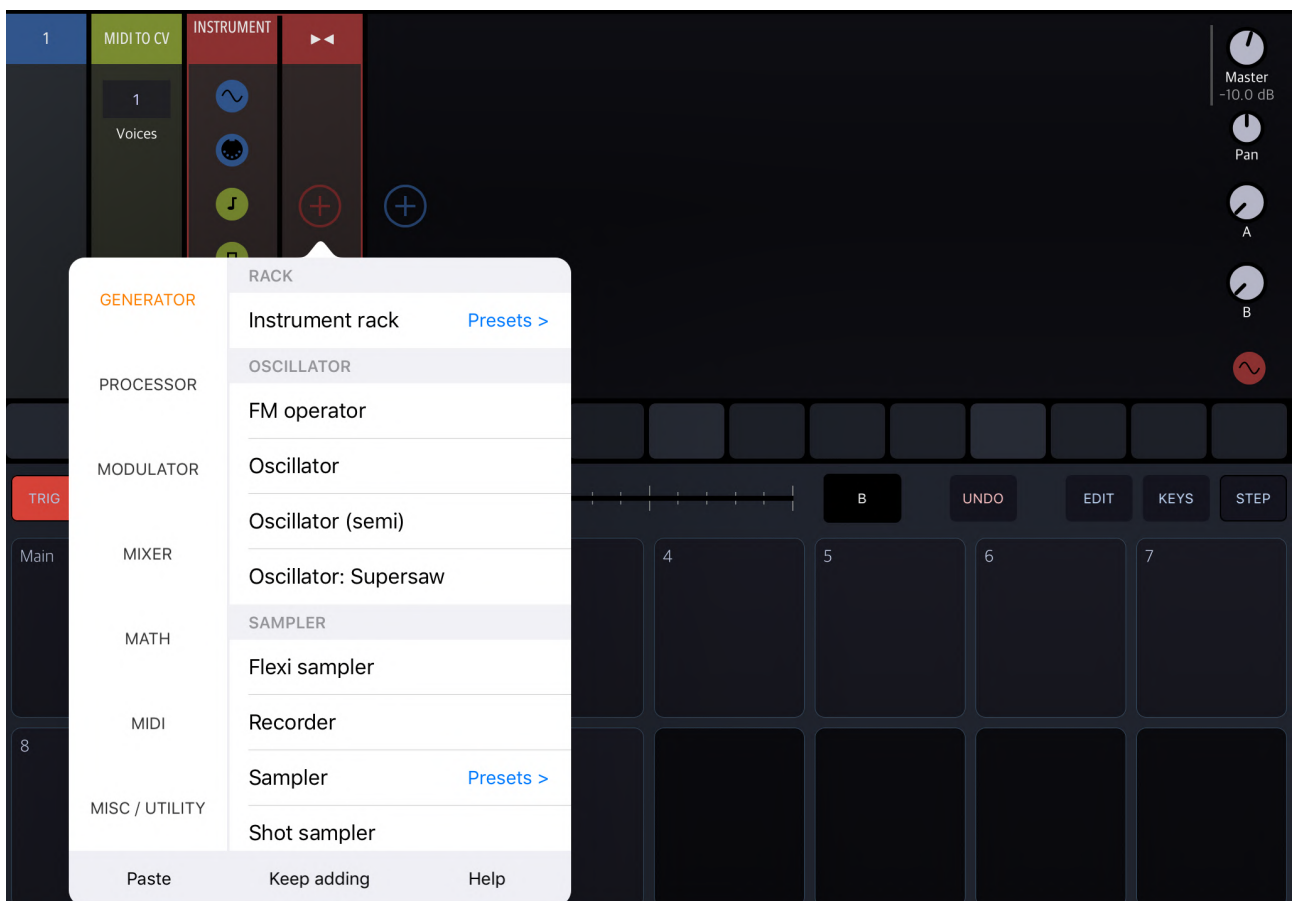
→ Tap and hold on the Oscillator module header (selection begin) until it turns green. You can select a range of modules, but we want all of them beginning from Oscillator, so press **Select All** then **Cut**



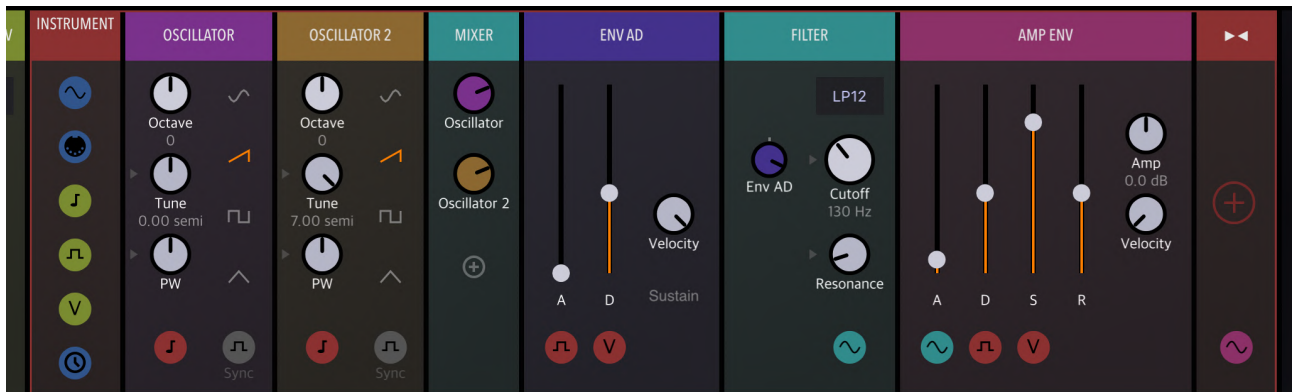
Our modules have been moded to the clipboard.

Now add an empty Instrument rack from the Generator/rack section.

When Instrument rack appears on the screen, tap on the red (+) and **Paste** in the bottom left corner of library browser.

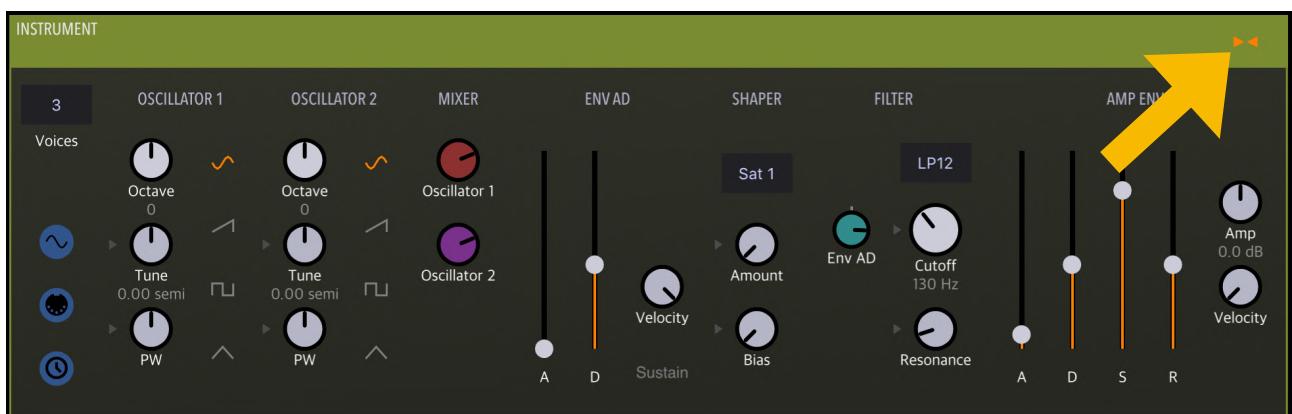


Now all of modules of our synthesizer are wrapped into Instrument rack module and can be treated as a separate module. Instrument rack has all necessary inputs that are passed to the internal rack.



Are you ready for some magic?

→ Tap on the icon located in the upper/right corner of Instrument module.



This image says everything :)

Now Instrument rack is in compact view mode.

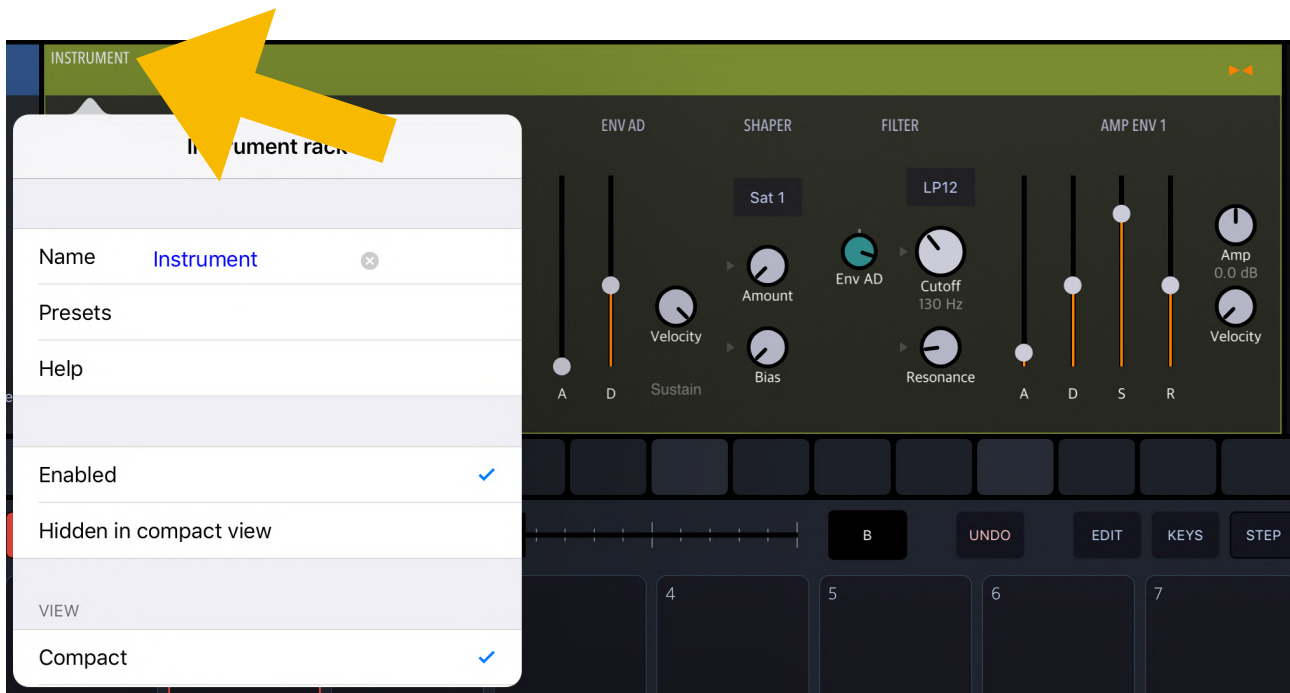
You can also hide internal modules so they won't show in the rack's compact view. Open the internal module menu (e.g. Shaper) and choose: "Hidden in compact view".

Let's save a new Instrument rack preset.

→ Tap the "Instrument" label in Instrument module.

→ Select Presets. Then select a target folder (you can create a new Folder) and hit Save in the top/right corner. Now enter your preset name and hit Enter on the onscreen keyboard. Done.

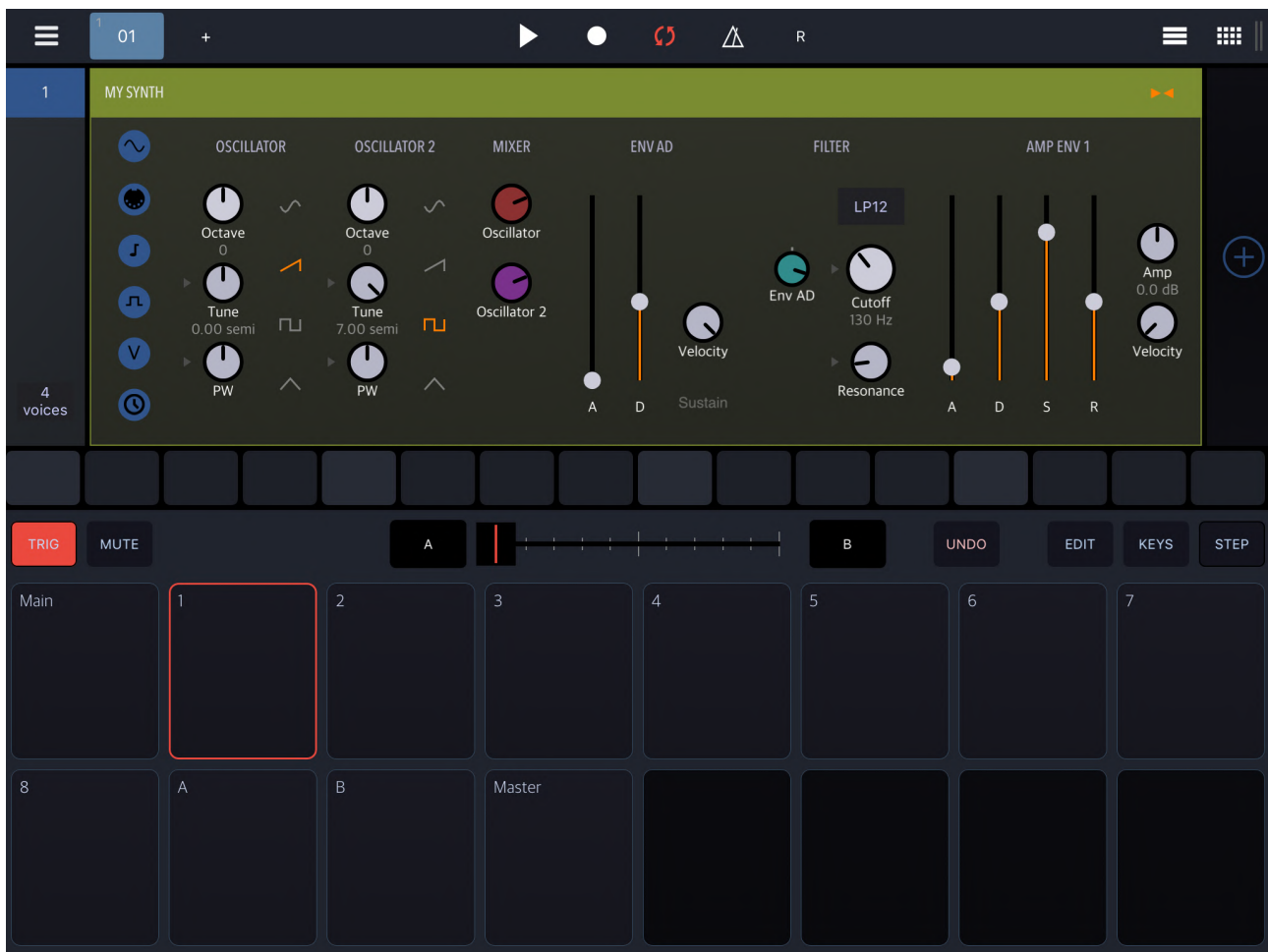
Before we move forward...



In this basic tutorial we relied mostly on automatic connections, but its not always what we want. You may connect modules in almost any way you want by tapping on the input socket and selecting any output socket you want. You could, for example, apply a filter envelope to an LFO before using it as a modulation source.

Each module has a short help available in module menu or in library browser window after selecting Help mode on the bottom bar.

Pattern sequencer



Let's get back to the big picture.

At the middle of the screen we see 16 steps that represent a sequence in the current pattern (01) on the current track (1).

Each step holds information about trigger, musical notes and more...

- Tap on a step to add a trigger (note)
 - Tap again to remove trigger (note)
 - Tap on a step and slide right/left to add a note with a defined, longer gate time so the note will be held over multiple steps.
- Let's add some notes.



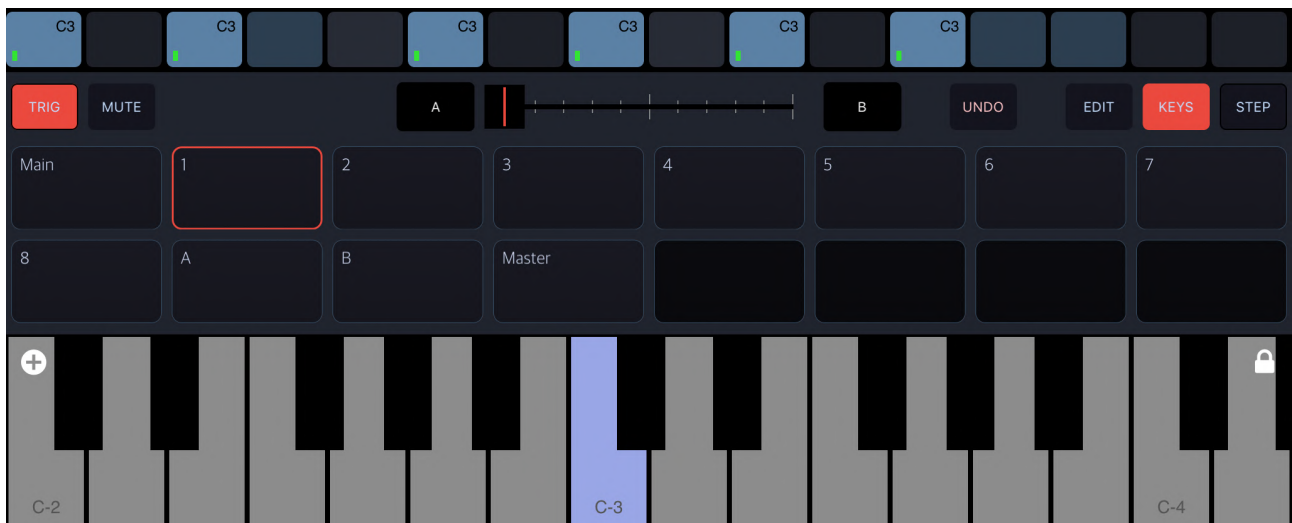
As you see, the 1st note is 1 step long, the 2nd note is 2 steps long and the 6th note is 3 steps long. I swiped to the right while adding them. Also, I can modify the step length by putting my finger on it and moving it to the left or right.

→ Press the play button.

You hear the playing sequence! But all notes are the same: C3.

Let's create a melody. Show the onscreen piano keyboard by pressing the KEYS button.

There is an option to use pads as a piano keyboard, go to menu/settings.



As you see the current note on this track is C3. Press another key, it will be selected, so that the next step you enter on this track will be set to this note.

You can edit steps in other ways like:

- Hold a key and tap on a step (swipe for gate length)
- Hold a step and press a piano key

One more thing: **You can play and enter chords.**

Make sure to set number of voices greater than 1 on your track.

There are 2 icons on the piano-keyboard view

- HOLD (+) on the left side - if its active you toggle piano keys on/off rather than playing them instantly. This helps setting more complex chords.
- LOCK on the right side - locks keyboard scrolling.

Overlapping notes are usable for glissando. Make sure to place the CV glide module (MISC/UTILITY section) at the beginning of your rack and disable the Retrigger option in the MIDI section of the current Track menu.

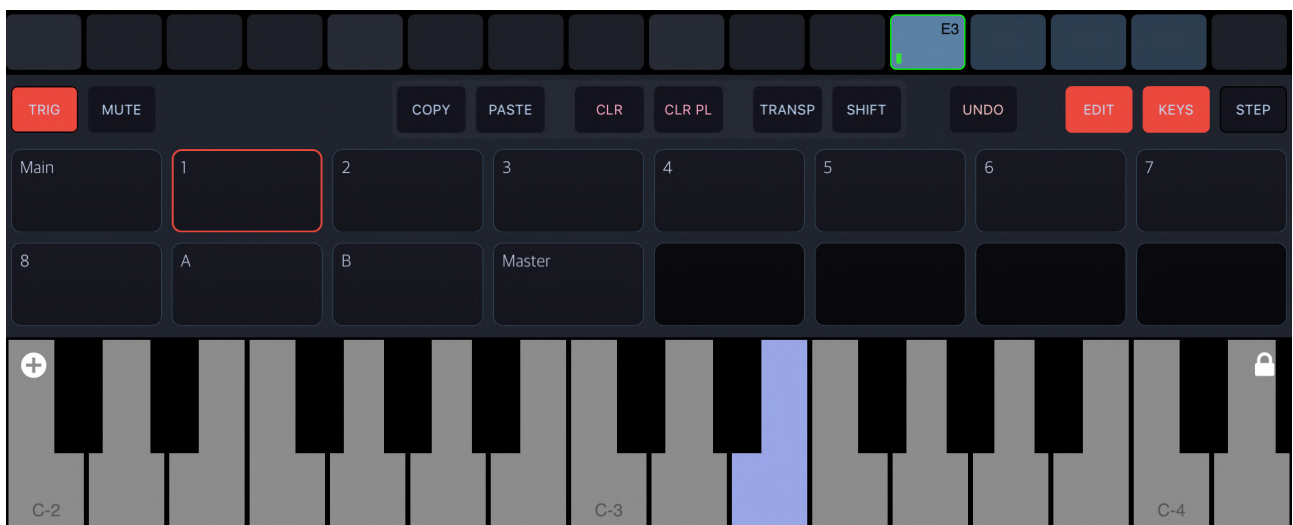
Power tip!

Instant copy / paste a step or a group of steps

- Tap and hold a step with your left hand or move your finger to select a bigger area.
- While holding it tap on another step. Area will be duplicated at the pointed place. You can repeat this.

EDIT mode

Tap on EDIT button to activate edit mode.

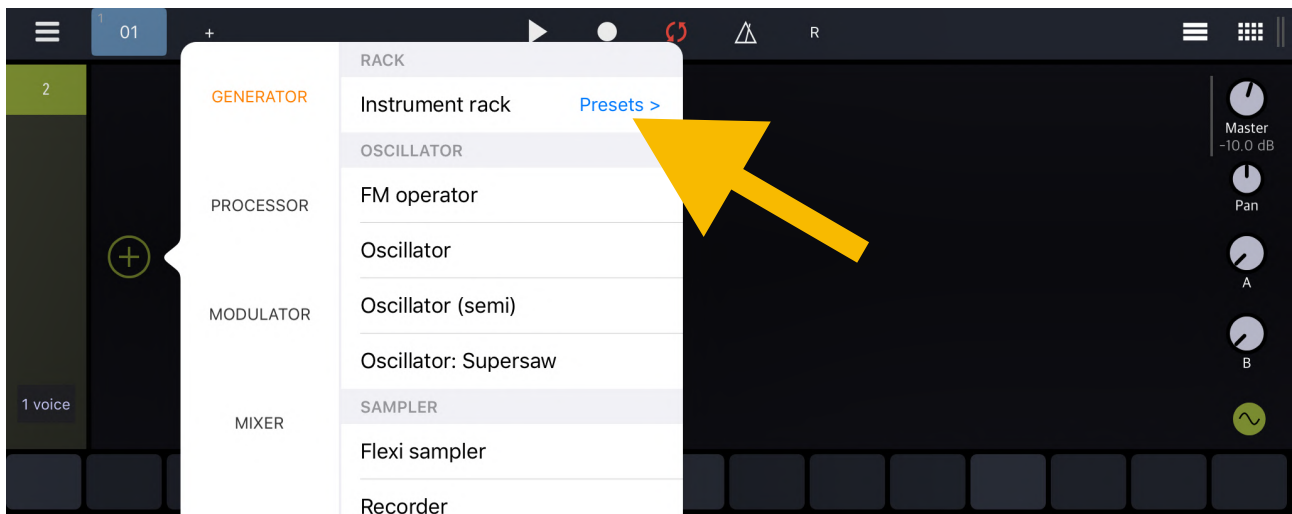


EDIT mode latches your selection on the step sequencer. You can perform the following operations:

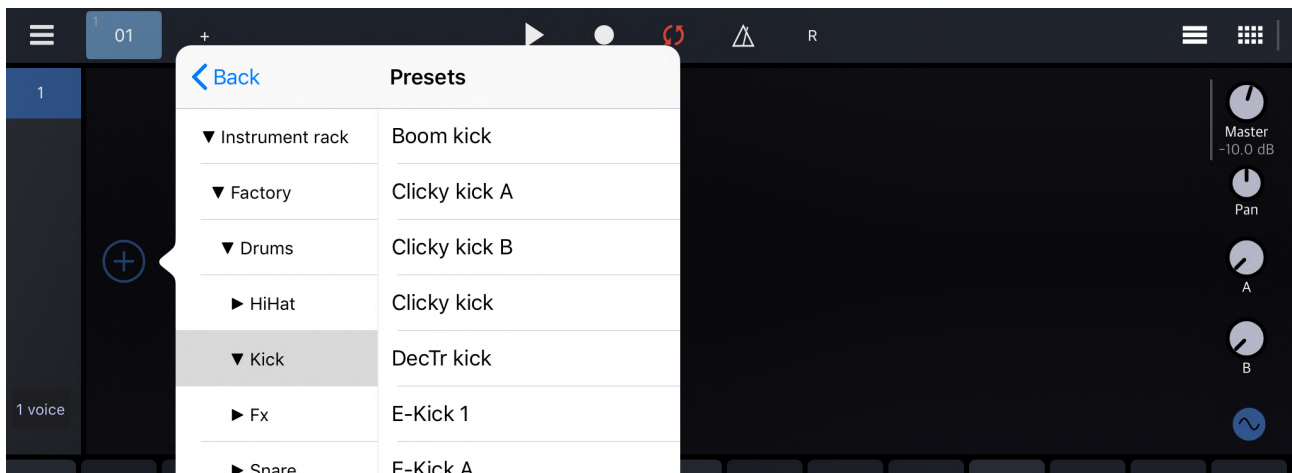
- Instantly set parameter locks with one finger
- Audition step by pressing it
- Copy
- Paste
- Clear
- Clear p-locks
- Transpose -
- Shift < (shifts the sequence to the left. This is actually a Rotate function.)

Add some beat on track 2

Select track 2, you'll see an empty rack, now tap on (+) and select the GENERATOR category and tap on "Presets>" in the Instrument rack menu entry.



Select Instrument / Factory / Drums / Kick folder and one of available kick drum factory presets (e.g. Clicky kick A)



It's here... Now add some steps to the sequencer.

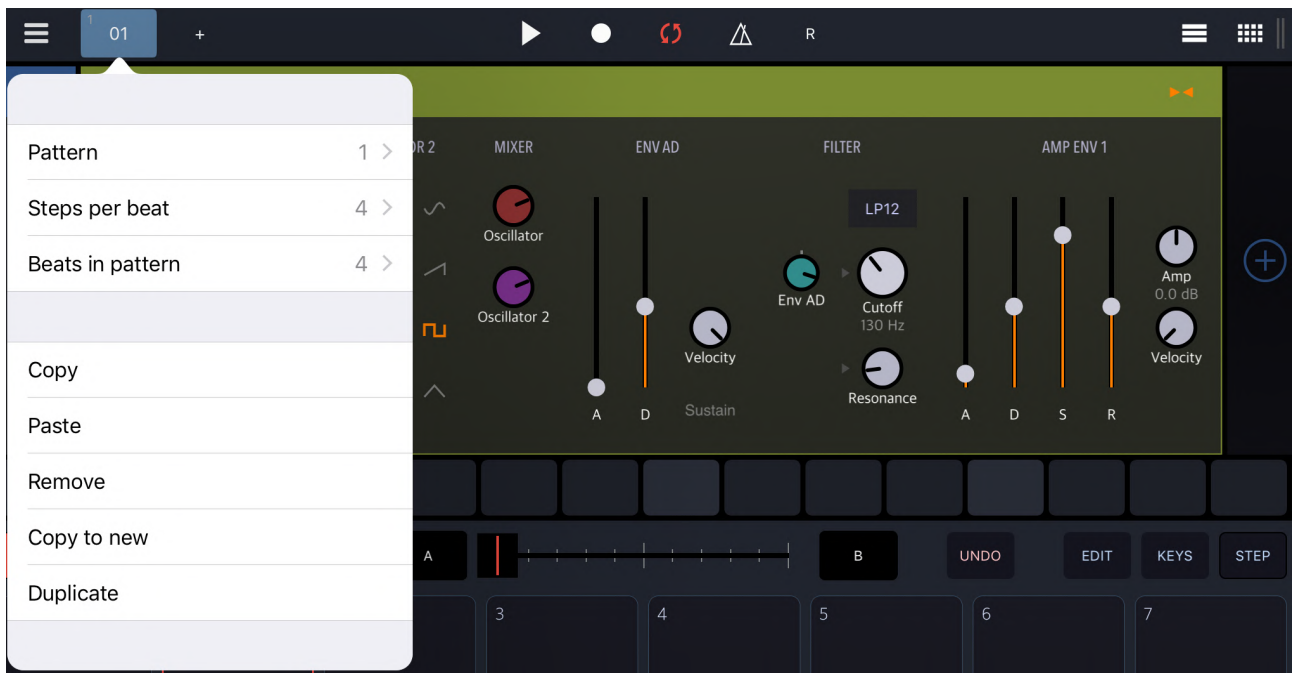


Play this short sequence with 2 tracks. Play with the rack, e.g. put Reverb or a Shaper after the "Clicky kick" module.

Increasing the pattern length

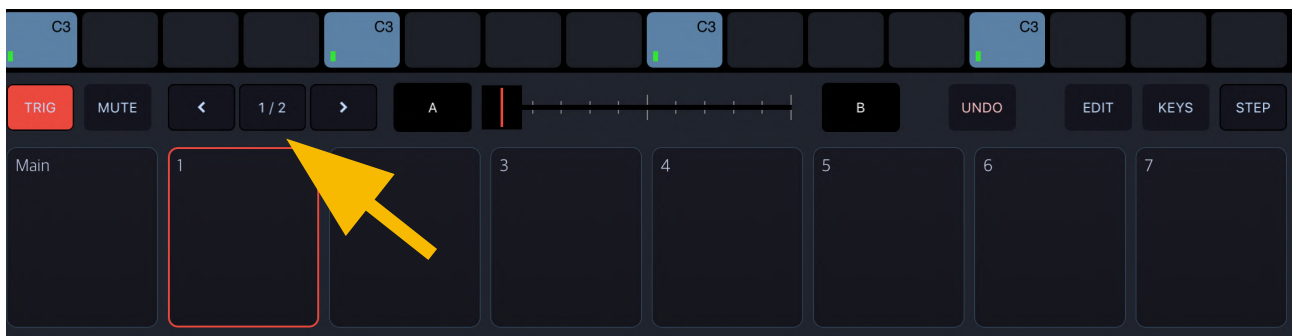
Currently our pattern is 16 steps long (4 beats * 4 steps in the beat). Let's increase its length.

→ Tap on the currently selected pattern and set "Beats in pattern" to 8.



Now our pattern is 8 beats long.

As you probably noticed, additional controls appeared on the bottom panel.



→ Use arrow keys to move between pattern pages

→ Tap on the middle button showing "1/2" to change the zoom level

32 steps on the screen:



More to know...

You can add / remove / copy / paste and configure patterns using the pattern menu presented above.

Each pattern may have its own time signature defined by Steps per beat and Beats in pattern. e.g. If you want to work with triplets, set 3 steps per beat.

If the loop button in the transport is selected, the current pattern will play in a loop.

When the loop button is not active, the patterns will play one after another.

If you select another pattern during playback it will be armed and it will play right after the current pattern is finished. You may change this behavior and set "Instant pattern switch" in Drambo settings.

Save your song

→ Tap on the burger menu button in the upper left corner and select "Save as". Press "Save" if you want to overwrite existing song.

Export / bounce audio

→ Tap on the burger menu button in the upper left corner and select "Export audio".

Parameter locks

Parameter locks simply mean setting any parameters (e.g. knobs) specifically to certain step sequencer steps. It's a very fast and handy way to create controlled changes in patterns.

- Deactivate EDIT mode, stop the sequencer and select track 1
- Tap a step and while holding it, change parameters (e.g. Turn the Filter cutoff knob).



Now play the sequence. As you hear, the p-locked parameters are changing on the step(s) you've locked them on.

Parameter locks on a step are active until the next step that contains a trigger (musical notes), on which the parameter value will return to its original position.

Parameter locks may be set on every step, even empty (trigless).

Add more p-locks to step and play with them.

In order to remove p-lock from a step, hold it and double tap on a p-locked parameter control.

In EDIT mode step remains selected, so that you can edit p-locks with one finger. You can remove all p-locks from selected area in EDIT mode. P-locks are copied with steps.

Tracks

Lets get back to the big picture.



If rack doesn't fit a screen you can scroll it, just start dragging from the area below module headers.

You probably noticed a mysterious Main track. Lets select it.

In Drambo, a Track is a module. The track rack may contain other Tracks. (On v.1.0 it's limited to the Main track).

What you see is a Main Track rack filled with Track modules since each track creates a Mixer view just by the way :).

→ Insert new tracks / remove them / rearrange / rename just like you edit other modules.

You see a default Main track template that consists of 8 tracks, 2 send tracks and a Master track. You probably noticed that track modules are not connected, except the last Master track which is connected to the Main track's internal output.

By default, tracks receive and send signals using internal busses A-H / Main and external inputs and outputs.

The track MIDI inputs provide additional control of tracks on top of the sequences inside the tracks. For now you can use it to transpose a track, here shown with track 1 as an example:



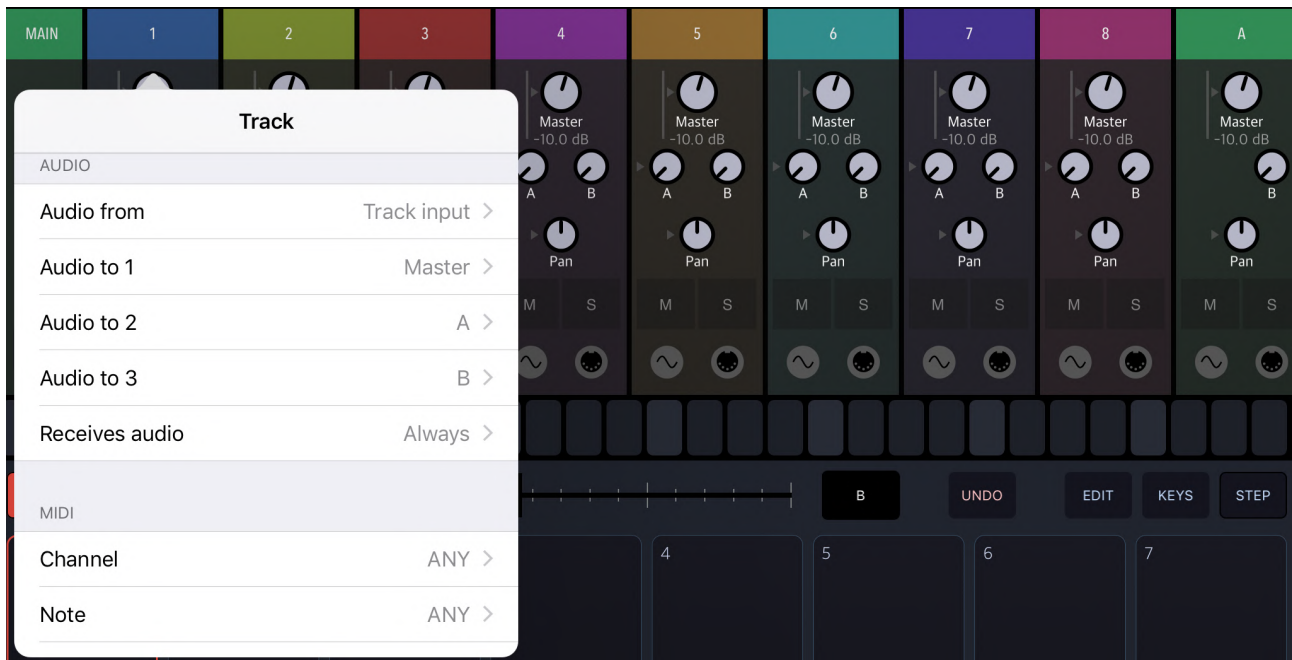
Each track module corresponds to an internal rack that is unfolded below.

Track modules appear/disappear/move as you add/remove/reorganize tracks.

Configuring a track module

→ Tap on Track 1 header

You will see the track module settings menu. Scroll up/down to see all parameters.



Name - set track name

Presets - access track presets

Enabled - enable/disable this track (the same as Mute)

Solo group - assign this track to one of 3 solo groups: A,B,C. Solo on each group works independently, so e.g. when you set Send and Master track to group B and the rest of tracks to group A, soloing "normal" tracks won't affect Send and Master tracks.

Mute style - Audio - track audio will be muted. MIDI - muted track won't receive MIDI events from sequencer.

AUDIO section

Audio from - select audio source for track, this can be Track input, one of 9 available mix busses or External audio input.

Audio to 1,2,3 - Set one of 3 targets the track output is sent to. These targets are represented by 3 knobs on the track module view (by default: Master, A, B). Target may be set to Track module output, one of 9 mix busses or external audio output.

Receives audio - Always or Active track. If Active track is set, track receives signal from selected audio input (Audio from setting) only when track is active. Its usable, when you use Drambo as an external audio processor.

MIDI section

Channel - Choose from which MIDI channel(s) incoming external MIDI events are routed to this track: ANY, 1-16

Note - Pass only one selected MIDI note

Receives MIDI - Active track / always / never. When active track is selected, the track receives external MIDI events only when it is active (current track).

Retrigger - When retrigger is set to On, overlapping MIDI events will cause the Gate signal to be retriggered. Useful for drum sounds. Disable if you use glissando on your track (CV glide module).

Morphs

Morphs is a performance feature that allows you to control and morph many parameters with a single slider.



By default you see 2 morph buttons A and B and a morph slider ("crossfader") that morphs between parameters set on A and B state (Linear transition between the values by moving the crossfader).

→ Tap on A to activate morph A and move the slider to the far left.

You'll see a half-transparent banner saying "P-LOCK: A" on the top left, indicating that you can now set parameter values for scene A. Change a few parameters, e.g. Filter cutoff and Oscillator tune.

Now move the slider from left to right. Parameter values that you set are morphing between morph A and their default values. (We didn't set them for scene B yet).

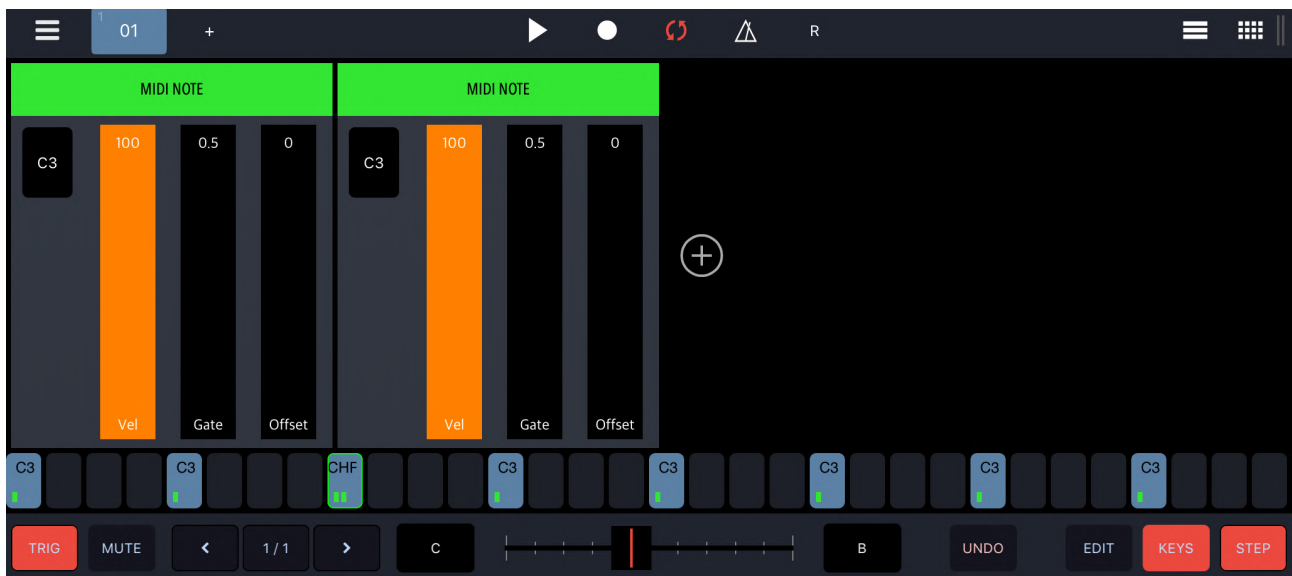
Now activate morph B and set new values for parameters you've previously set and play with the morph slider position.

16 morphs are available and may be selected using pads.

Step components

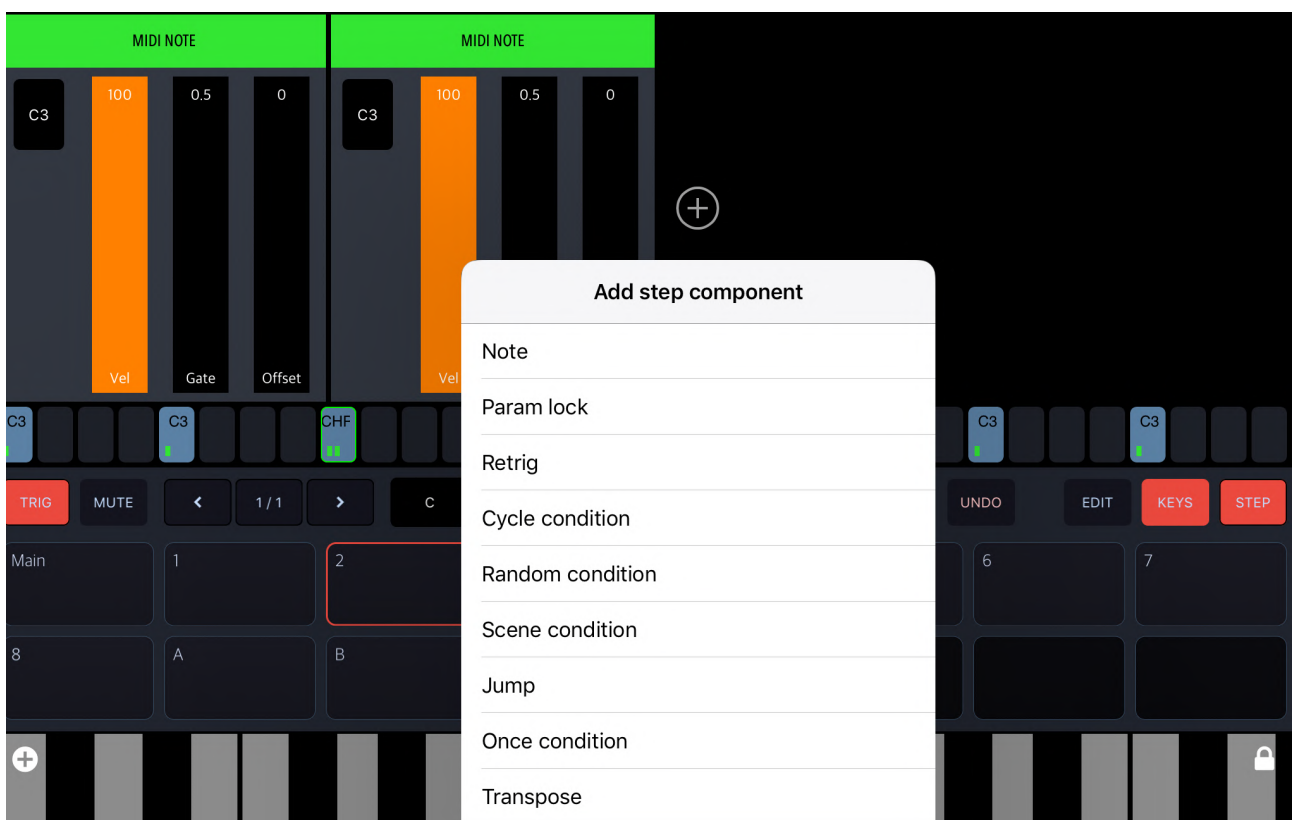
Each step in a sequence consists of components. Component may be note event, p-lock data, MIDI cc track actions or a condition. The component editor allows you to edit step data precisely and to add some conditional logic for sequencing variety.

Tap on the STEP button to open step component editor.



When sequencer reaches a step, all of its components are executed in order, beginning from the left. Conditional component - if condition is not met all succeeding components will not be executed, until next conditional component.

Select step to edit its components. You edit component list the same way as you edit racks. Tap on (+)



Components

Note - Represents a MIDI note event. You can set velocity, gate, offset and note (by holding the note symbol and tapping a key on a piano keyboard).

Retrig - Retriggers all Note components located before the Retrig component.

Jump - Jump to a specified step, resulting in a shorter sequence. A great tool for creating polyrhythms. Use together with conditional components to create random variations.

Param locks - represents all parameter locks in the step. This component is inserted automatically and is just a collective placeholder. You can put a conditional component before to execute parameter locks conditionally.

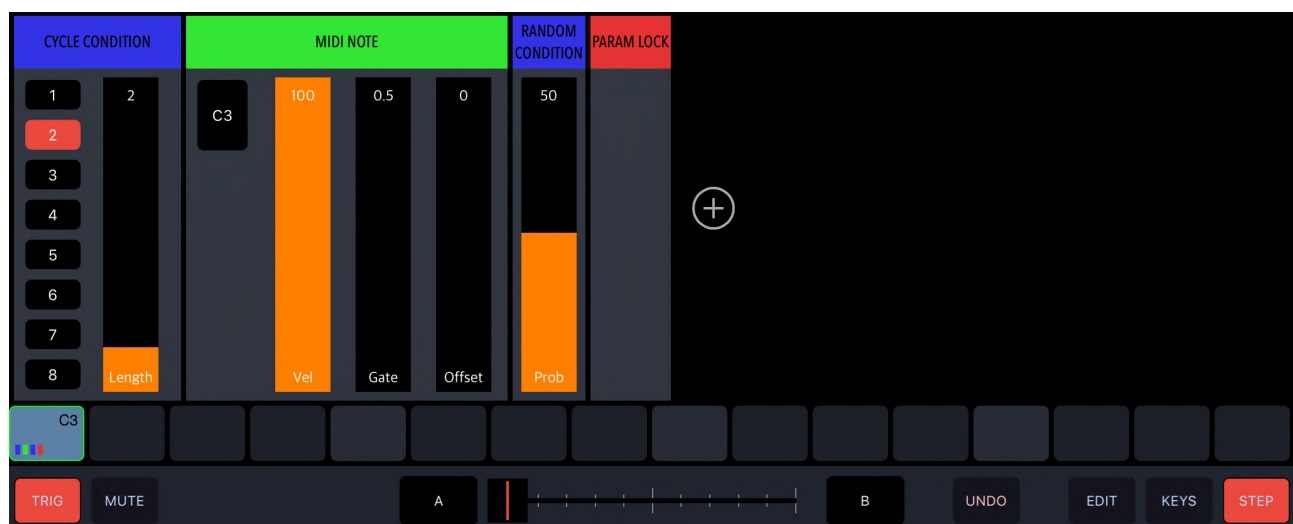
Cycle condition - The following components are executed on selected pattern passes in the cycle of defined length.

Once condition - The following components will be executed only once at first sequence pass.

Random condition - The following components are executed randomly with the defined probability.

Scene condition - The following components are executed only when the selected Morph is active.

In this example, we see all components of the first step. Cycle condition causes the MIDI note component to be active at every second pass of the pattern (2nd of 2 length). Parameter locks are active at the probability of 50% (Random condition).



Recording

Hit the record button and press play to start live recording, tap again to stop.

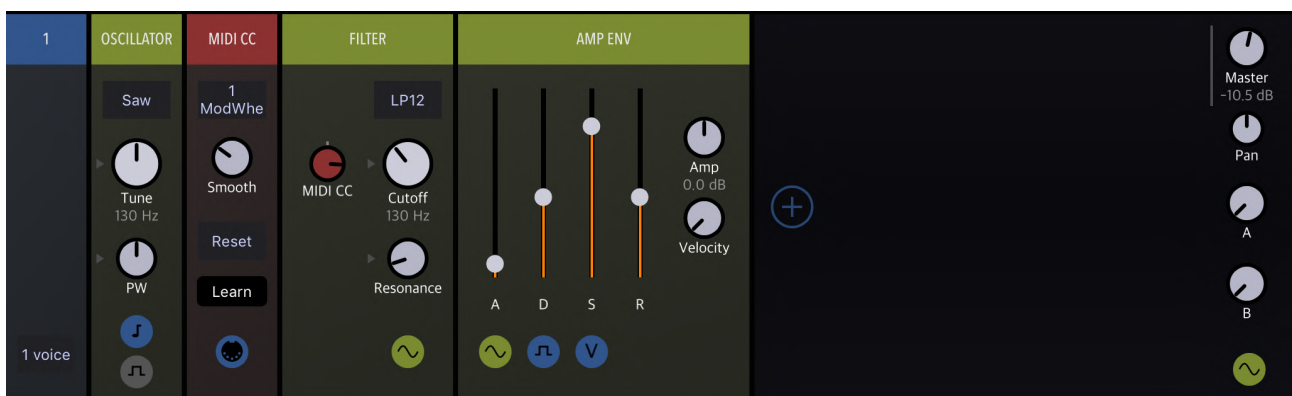
By default note events are recorded and quantized to steps. Parameter changes are recorded on active steps or on every step depending on recording settings. You can disable quantization in the "R" menu.

Press UNDO to undo the previous recording.

External MIDI

Modulate your synth with external MIDI

In order to modulate your module parameters with external MIDI CC events, use the MIDI CC module from the Modulators section. Tap on Learn and turn a knob on your controller to detect the CC number of the incoming MIDI control message automatically. You can configure smoothing as well. When Reset is active, the signal is instantly updated with each Note-on event.



In the current version of Drambo (v 1.0) you can't assign MIDI controls directly to knobs and interface elements yet. (Working on this :)

Sequence external synths

You may sequence and modulate external synths in standalone, AUv3 instrument or MFx mode. It's easy, just use the MIDI Output module (Utils / MIDI section) to send track MIDI events to the outer world. Make sure you set MIDI port and channel correctly.



You may use a factory template available in Drambo. Just press "New" in main menu and select "MIDI Sequencer".

Modulate external synths

Drambo can generate MIDI CC events and send them to external synths via its MIDI output port (available both in standalone and AUv3 version).



Use the MIDI CC generator module to convert an incoming CV signal to a stream of MIDI CC events. You can select a CC number and configure the input signal type as bipolar or unipolar. (bipolar: -1..1 -> 0..127, unipolar: 0..1 -> 0..127).

Modular recipes

Pitch and key tracking

In Drambo, pitch information is carried by the pitch signal (sockets with a note symbol).

Value 0 represents C2 (130.8 Hz). Most pitch-related knobs are set to this value by default and it means that the module should follow an exact pitch it gets. If you are out of pitch and want to get back, double tap on the Pitch knob and reset its value to default.

Each increment/decrement of $1/8$ (0.125) means octave up/down. So the range of 0-1 represents 8 octaves.

Key tracking - if a module doesn't have pitch input and it's pitch may controlled only by a Pitch knob (e.g. Filter cutoff), modulate its Pitch parameter with Track pitch control signal. When modulation knob is set to full right, key tracking is 100%.

Retriggering notes

- Place a retrigger step component on a step in Step component editor.
- Use the powerful Retrigger module (Sequencer section).

Glide / Portamento

1. Disable MIDI / Retrigger in track module (track menu), so that overlapping notes won't generate an additional GATE signal. (This mode works better with drums)
2. Place CV Glide module (MISC/UTILITY) at the beginning of the track.

Polyrhythm

Use Jump step component to break a track, combine it with conditional components for more variations.

Ring modulation

Use the Multiply module from Math section. Yes, ring modulation is nothing else than just multiplying the amplitude of two signals.

Oscillator sync

Connect the oscillator gate input to the synchronization source (e.g. another Oscillator).

MIDI CC modulation

Use the MIDI CC module (

Transpose track from its parent track

On the Main Track: Connect internal MIDI output to a Track MIDI input. From now on, the track will be transposed by the current note that is received on the Main Track.

MPE

MPE is transparent ... like polyphony or stereo processing.

In order to use MPE mode:

1. Create empty Instrument rack module
2. Open its menu
3. Set Mode to MIDI
4. Check MPE setting

Good habits

Organize your modules

- If you want to make a synth start from Instrument rack
- If you want to make an FX start from Processor rack
- Use Layer and Layer mixer to keep your rack shorter and better organized. Layer mixer houses many racks that are processed in parallel, but only one of them is visible.

Troubleshooting

I can't see Drambo files in Files app

Drambo works as AUv3 and audio units can't access public application folder (system limitation). That's why Drambo "is forced" to use internal folder structure and import/export options.

I hear clicks and pops

Increase the latency setting in the standalone app (MENU/Settings) or in your DAW. 128 samples may be too short for your racks, depending on your device and number of apps and/or plugins running simultaneously.

Reduce the polyphony on tracks. (e.g. 8 -> 4)

Make sure you optimize your patches, e.g. use single-voice modules when higher polyphony wouldn't make any difference in sound.

My modular rack is not playing as expected in polyphonic mode

When dealing with polyphonic signals, remember about two rules:

1. Polyphony is propagated from the source module to the following connected modules.

Example: The noise module by default sends 1 voiced signal, because it's not connected to anything. When you connect its gate input to the polyphonic track gate output, it starts generating polyphonic noise. (*thats what the gate input is for)

2. Some modules don't work polyphonically and therefore convert a polyphonic signal passed through them into 1 voice. These modules are marked with a (1) sign in the library browser: Channel EQ, Chorus, Compressor, Delay FX, Delay rack, Phaser, Pitch shifter and Reverb.

Imagine we have such a patch in a 4-voice Track:

Oscillator -> Reverb -> AMP env ADSR

As you'll notice, this combo behaves weirdly and you can hear only 1 note per each 4 played. That is because Reverb converts 4 voices from the oscillator to 1 voice and sends it to the AMP ADSR.

In this case, AMP ADSR is gated by a 4-voices gate signal from the track and receives only the first voice from the Reverb.

Hanging notes

Double tap the play button to trigger the "panic" rescue function.

Bon voyage!

Try to avoid using the standard method of doing things when you're experimenting. Go ahead and get weird! (inside Drambo, that is :) A few examples:

- Use audio signals for modulation. e.g. Modulate filter cutoff with oscillator its connected to, or other. Do the same with frequency shifter, shaper or bit redux modules.
- Assign filters, amplitude envelopes to separate oscillators.
- Use LFOs as gate generators.
- Process LFO and ENV signals before you use them as a modulators. e.g. LFO -> resonant filter -> oscillator pitch.
- Use math functions on mixed oscillators.. e.g. Maximum, to get new timbres.
- Remember: there is a Graphic shaper and a Graphic env module. Draw any curve you want, shape signals however you want.. e.g. Velocity curve re-mapping, drawable envelopes, wave shaping.

Drambo is an open-ended app, so what you see is just the beginning and probably will be for a long time :)

With upcoming updates you may expect:

- Many exciting bugfixes :)
- MIDI learn functionality
- Live sync
- Clip launcher and independent clips
- UX improvements
- Analog filter emulations
- Granular samplers
- New oscillators
- New effects

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