

# MIDISynth-Circuit & Tracks 2.0.0

## User Guide

[www.sigabort.co/midisynth](http://www.sigabort.co/midisynth)



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# 1 Overview

MIDISynth-Circuit is a VST/AU for Windows and OSX that allows you complete control of your Novation Circuit from inside your favourite DAW, or as a standalone application.

As well as providing detailed control of both synth engines, session, and drums, the editor can be used for storing and retrieving patches/patch banks and for performance via a supplied Lemur template.

## 1.1 Requirements

- Windows 7+
- OSX 10.11+
- Novation Windows Driver for Windows - See section 6.
- Screen supporting resolution of 1500x550 (zoom available)

## 1.2 Limitations

### 1.2.1 Windows Users

Windows does not have multi-client MIDI drivers and the synth only provides a single USB MIDI input/output, so you'll need to ensure nothing else is connected to synth when using the editor.

This also extends to using the VST inside a host – please make sure that the host doesn't open the synth MIDI input/output, or any MIDI port used for controller input (see your host documentation for how to set this up). You can still send data to the synth through the plugin by enabling the **MIDI Thru** option (see section 2.1.9).

### 1.2.2 Windows Virtual MIDI Ports

MIDISynth will take input from a MIDI port named **MSVP\_Circuit\_Out** and route this through to Tracks. You can use this inside your DAW to send clock information to Tracks for syncing arp, LFOs etc.

MIDISynth will take the note input from Tracks and route this through to a MIDI port called **MSVP\_Circuit\_In**. You can use this to get note input into your DAW.

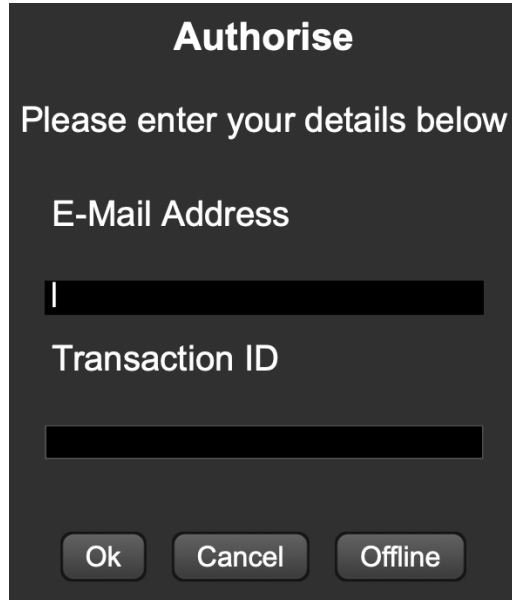
Use LoopMIDI or other virtual MIDI port software to set these up.

## 1.3 Installation

Click on the installer and follow the instructions.

## 1.4 Authorisation

When you start the editor, you will be asked to authorise.

A dark-themed dialog box titled "Authorise". Below the title, it says "Please enter your details below". There are two input fields: "E-Mail Address" and "Transaction ID". At the bottom, there are three buttons: "Ok", "Cancel", and "Offline".

**Authorise**

Please enter your details below

E-Mail Address

Transaction ID

Ok Cancel Offline

Enter your purchase email address and the PayPal transaction number you received with your purchase. Authorisation will take 15-20 seconds to complete.

### 1.4.1 Offline Authorisation

If you wish to use the editor on a computer not connected to the internet, then install the software and hit the **OFFLINE** button.

Follow the instructions to create an authorisation file and send it to:

[offline\\_auth@sigabort.co.uk](mailto:offline_auth@sigabort.co.uk)

Please note that this is currently a manual process and authorisation may take up to 48 hours.

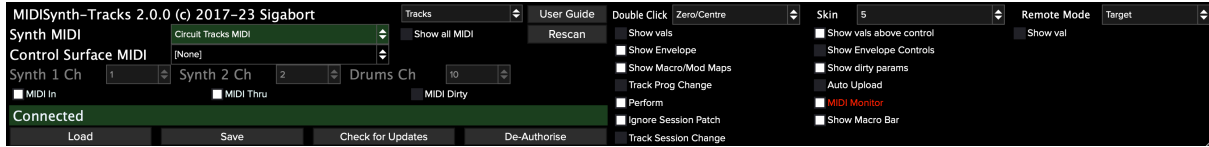
Offline computers will need to be re-authorised every 90 days.

### 1.4.2 De-Authorisation

If you wish to de-authorise a computer so that a different computer can be authorised, use the button on the settings page (see 2.2.20).

## 2 Setup

Click on the **FULL** button to display the sub-panel and click **SETTINGS** to show setup options in the lower portion of the editor.



### 2.1 MIDI

#### 2.1.1 Synth Selector

By default, the app will be set to work with the original Circuit. If you have Circuit Tracks, use the selector to change from Circuit to Tracks and restart. This will be remembered for future sessions.

#### 2.1.2 Device MIDI Port

The MIDI port of the Circuit is auto selected if detected at startup. If you are lucky enough to have more than one Circuit, use this to select a different MIDI port.

#### 2.1.3 Controller MIDI Port

The controller MIDI port can be used to select a MIDI device that can be used for controlling the V-Macro controls (see 3.7), custom controls (see 3.3) and general MIDI mapping of controls on the UI (see 3.1.10). Additionally, all MIDI from this port will be routed through to the synth so you can route an external keyboard or controller to the synth.

#### 2.1.4 Circuit MIDI Channels

MIDI channels can be specified for Synth 1 (S1), Synth 2 (S2) and Drums. Requires Circuit OS 1.8

#### 2.1.5 Rescan

Rescan connected MIDI devices.

#### 2.1.6 Show All MIDI

Enable this option to show all MIDI ports on the computer.

#### 2.1.7 MIDI In

Enabling this option will processing incoming MIDI data from the controller and update the GUI appropriately (turning the knobs on Circuit or automation data). Depending on the state of the 'MIDI Sets Dirty' flag, this will also set the edit buffer as "dirty".

## 2.1.8 MIDI Dirty

Enabling this option will cause incoming MIDI (turning the knobs on Circuit or automation data) to mark the current edit buffer as “dirty” and flag that the user needs to save it when moving away from the patch.

## 2.1.9 MIDI Thru

Select this to process note in information from the DAW – this should be selected when a host sequencer (e.g., Live) is being used to send MIDI note information rather than using the Circuit on-board sequencer.

# 2.2 General

## 2.2.1 Double Click Action

Determines what happens when a control is double-clicked:

- **Off:** No action
- **Zero/Centre:** Control is set to 0 or centred if it is bipolar
- **Default:** Control is set to the Novation default
- **Patch:** Control is set to the value when the patch was loaded

## 2.2.2 Skin

Change the look of the App.

## 2.2.3 Remote Mode

Selection mode of operation for the performance controls (None, Target, Perform) – see section 5.

## 2.2.4 Show Vals

Enabling this option will show the current value underneath each control. The user can click on this to manually enter a value.

## 2.2.5 Show Vals Above Control

Determines whether control values are shown above or below controls.

## 2.2.6 Show Val

Enabling this option will show the value of the currently moving control.

## 2.2.7 Show Envelope

Enabling this option will show a graphical representation of envelopes in the appropriate panels.

## 2.2.8 Show Envelope Controls

Enabling this option will show envelope controls sliders under the envelope display.

## 2.2.9 Show Macro/Mod Maps

Determines whether macro and mod mappings are shown on the editor (see 3.1.9).

## 2.2.10 Show Dirty Params

Enabling this option will show dirty parameters for the patch in purple.

## 2.2.11 Track PC

Determines whether the synth editor should follow program change (patch selection) on Circuit.

## 2.2.12 Auto Upload

When enabled the patch will automatically be uploaded to Circuit when it is saved.

## 2.2.13 Perform

Show the performance options – see sections 3.8, 3.9, 3.10, and 3.11.

## 2.2.14 MIDI Monitor

See 6.5.

## 2.2.15 Ignore Session Patch

Does not load patch content or drum patch specified in sessions.

## 2.2.16 Show Macro Bar

When enabled 8 macro and 8 v-macro knobs will be shown at the top of the main window.

## 2.2.17 Load At Startup (VST/AU only)

If enabled, the state of the editor when you last saved your project set will be reloaded and sent to Circuit synths 1 & 2.

## 2.2.18 Track Session Change

When enabled, changing session on Circuit will cause synth1 & synth2 parameters to be updated.

## 2.2.19 Check for Updates

A check for updates is automatically performed at startup, but can also be triggered manually,

## 2.2.20 De-Authorise

De-authorises this computer so that the editor can be used on a different computer.

# 2.3 Storage

## 2.3.1 Load

This will load a state previously stored with the **SAVE** button.

## 2.3.2 Save

When saving, the following information is stored:

- Setup data
- Patch data
- Extended patch data
- Session data
- XY control assignments (global)
- Performance control data
- Custom parameter assignments
- Colour assignments

**Please note all state is automatically saved with the host data when running VST/AU, so LOAD/SAVE are convenience functions rather than necessities.**

## 2.3.3 Auto-Save

When running standalone auto-save actions are performed under the following conditions: (this auto-save will automatically be loaded the next time the editor starts up)

- Setup options are updated
- A patch is saved
- A session is saved
- Performance controls are updated, including setting range
- XY controls are updated, including setting range
- Colours are changed

# 3 Operation

A zoom control is provided at the top of the screen for sizing the display to fit your screen.

Full-screen mode can be toggled via the use of the Sigabort icon in the top-left corner of the screen.

## 3.1 Main Controls

The top portion of the screen is filled with the main synth controls, covering Synth 1, Synth 2, and Session. Both sets of synth engine controls are completely independent and have no influence over each other.

### 3.1.1 Synth 1 & 2



Holding **SHIFT** whilst moving a control will allow for fine grained control.

Holding down **SHIFT** and selecting **SYNTH1** or **SYNTH2** will bring up a colour selection allowing the colour of the synth controls to be changed.

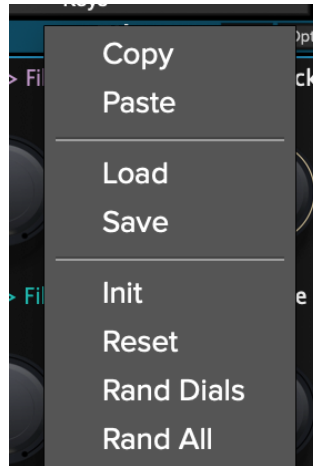
Sections that have been edited (i.e., are different from the current loaded patch), will be marked with an **\***.



Additionally, if Show Dirty Params is selected, any parameters that are different from the currently loaded patch will be shown in purple.

## 3.1.2 Section Controls

Each section has an **A/B** button and an **OPTIONS** menu.



Toggling the **A/B** switch will toggle between your current (edited) settings and those of the patch when it was loaded.

**Note:** When **A/B** is enabled (i.e., using the loaded patch settings rather than the edited settings), the **COPY** and **SAVE** buttons will operate on the patch settings, not the edited settings.

## 3.1.3 Section Presets

Up to 10 presets can be saved and recalled for use in other patches – think of this as a favourites menu.

Pressing **SAVE** will bring up a menu showing any existing entries. Choose an existing entry to overwrite or an empty slot to create a new preset.



Clicking on an empty slot, or **SHIFT**-clicking on an existing slot will allow you to name the preset.





**CMD/CTRL**-clicking on an existing slot will delete the preset.

### 3.1.4 Section Headers

**SHIFT**-clicking on the section head is a shortcut to perform the randomise dials operation.

**CMD/CTRL**-clicking on the section head is a shortcut to perform the randomise all operation.

### 3.1.5 Single Macro/Mod

A single macro or mod panel can be shown on the main screen by using the **MACRO** and **MOD** buttons on the mixer section.



## 3.1.6 Session



Whilst it is not possible to get session state or upload session state to Circuit, 32 presets are provided to allow you to store different session setups. These can be sent to Circuit at any time via the use of Program Change messages (see section 4.2).

### 3.1.6.1 Session Patches



In much the same way that patches can be associated with sessions on Circuit, it is possible to assign patches to the session settings so they can be made when loading a session.

Two modes are supported:

- Patch - The patch contents are stored with the session when they are assigned. These are a complete copy of the patch and will not be affected by any changes later made to that patch in the editor.
- Prog – Loads the specified patch currently stored on Circuit (not in the editor)

Patch loading for synths and drums can be skipped when changing sessions by holding down **SHIFT** when making the selection.

## 3.1.7 Macro



Hold **SHIFT** and press **PASTE** to paste the currently copied macro to all 64 patches.

## 3.1.8 Mod



## 3.1.9 Show Macro/Mod Mappings



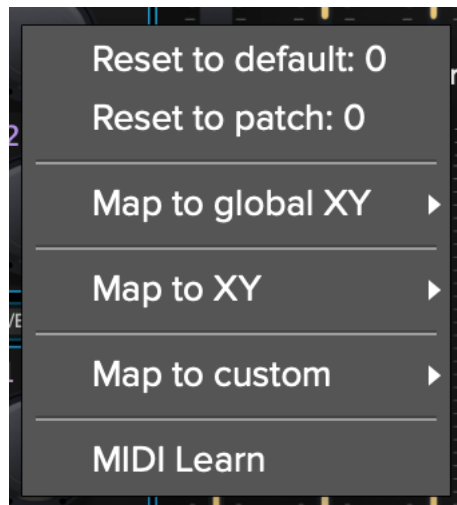
If this is enabled then all macro/mod targets will have two indicators placed next to them, one for macro (top) and one for mod (bottom). Red indicates the parameters it not mapped to a macro/mod destination, and green indicates that it is. Grey indicates this parameter does not have a mapping for one of the slots.

Right click on the parameter to see what is mapped to the parameter.

NOTE: As there is no “None” parameter for mod targets, the parameters will only show as mapped (i.e., green) if the depth is non-zero.

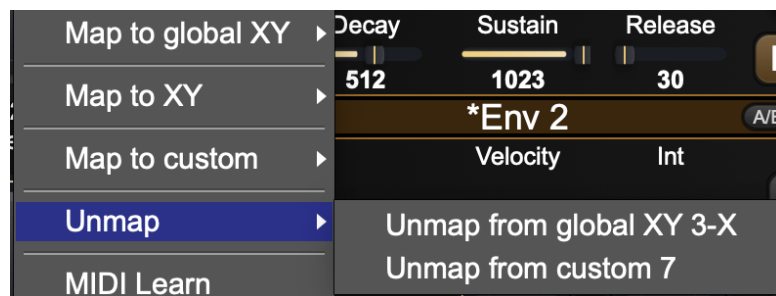
## 3.1.10 Control Operations

Right-clicking on a control will bring up options for the control.



From here it is possible to assign the control to one of several destinations and also perform MIDI learn for any provided controller (see 2.1.3).

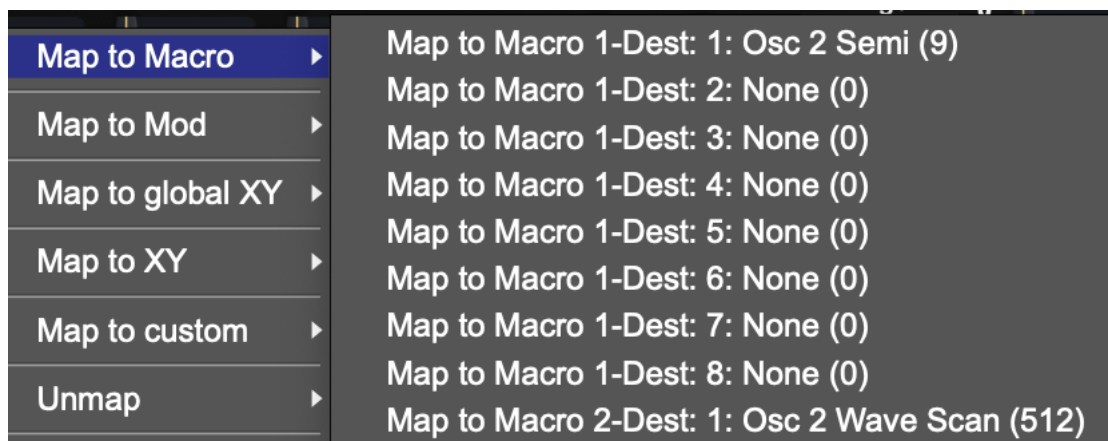
You can also unmap any assignments made:



Assignments to XY pads and custom controls can also be made directly from the components themselves.

### 3.1.10.1 Mod/Macro Mappings

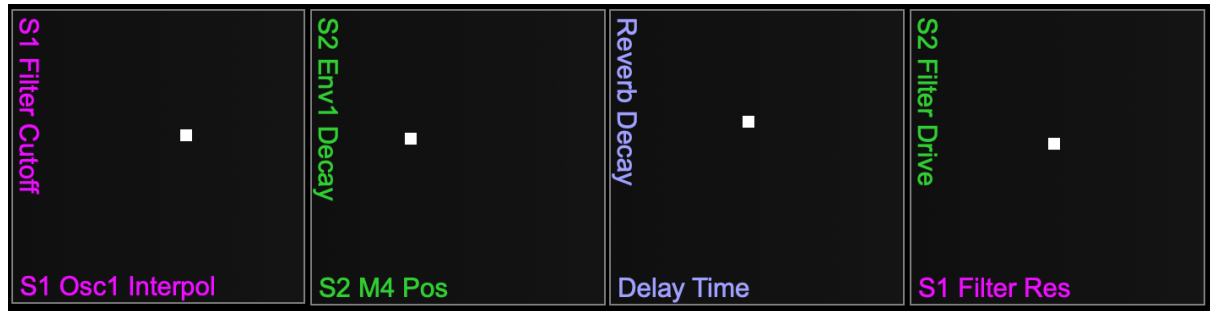
If the parameter is a macro or mod target, an additional menu item will be available allowing the parameter to be assigned to a macro/mod matrix entry.



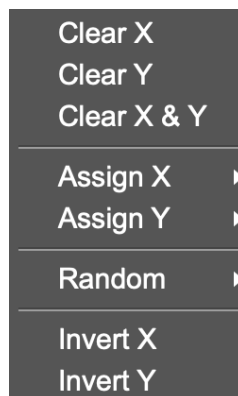
When mapping a macro or mod slot in this way, the display will automatically switch to show the single mod/fx mod so that the depth can be altered immediately (see 3.1.5).

## 3.2 XY Controls

Four XY controls are provided for easy control of multiple parameters at the same time. The XY controls are freely assignable to any parameter of the synth and aren't restricted to controlling the same synth section, e.g., one axis can control a Synth 1 parameter whilst the other access can control a Session parameter.



Right-click on the XY pad to bring up options.



Using the **ASSIGN** operations will allow you to pick controls to assign to the XY pad. Alternatively, these can be assigned directly from the controls themselves (see 3.1.10).

Using the **RANDOM** operations will assign random parameters to the pads for some pot-luck surprises.

See section 5 for details of how these controls operate with respect to host automation.

### 3.2.1 Global XY Controls

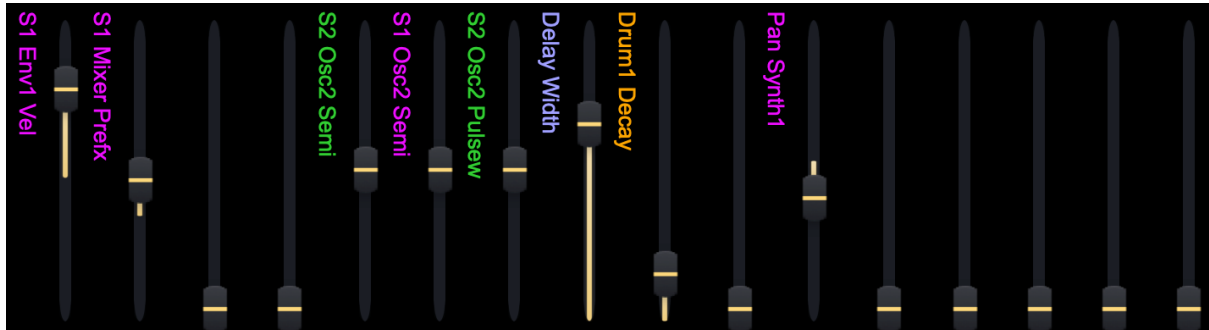
It is possible to store a set of XY definitions for each patch as some controls may be more appropriate for certain patches compared to others.

It is also possible to define a set of global XY controls that are always available.

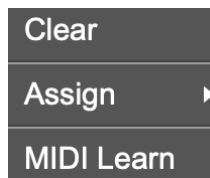
To enter global XY control mode, click on the **XY** button whilst already in XY sub-mode. The button will change colour and you can now define a set of global XY controls. Pressing the button allows easily toggling between the two modes.

## 3.3 Custom Parameter Assign

16 parameters can be freely assigned to any parameter on the synth and these will then be available on the Lemur template or via other OSC interfaces.



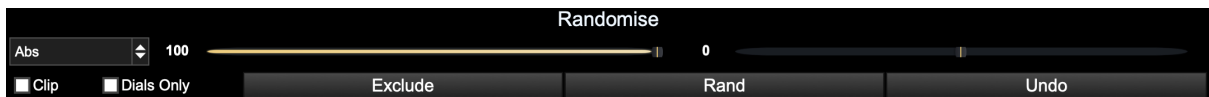
Right-click on a parameter to bring up options.



See section 5 for details of how these controls operate with respect to host automation.

## 3.4 Randomise

Three randomisation algorithms are provided for discovering new sounds. Several parameters are provided for each randomisation mode to tailor how mild or extreme the randomisation is, and sections or individual parameters can be excluded to further increase control.



### 3.4.1 Common Controls

These controls are available in all random modes.

- Dials Only – enabling this will disable all dropdowns from randomisation
- Exclude – Allows individual controls to be excluded from the randomisation
- Random – Randomise with the current settings

The button matrix can be used to provide high level exclusion of sections of the synth.

### 3.4.2 Absolute



An absolute value will be set for the parameter between its min and max value.

- **Range** – this determines the max upper value – a random value will be chosen between 0 and this %age of its max value

- **Affinity** – whether the value tends to favour min (-ve) or max(+ve) values.

### 3.4.3 Relative



This randomiser will generate random values based on the current values in the synth.

- **Range** – the maximum movement as a %age of range (i.e. max – min values) that the value can move
- **Noise** – how often (%age) the range is ignored to pick a random value. Negative values still obey the max of 50% of range, positive values set the range to be 100%
- **Clip** – affects behaviour when the new value would be outside of the min/max range. When clipping is on, they are fixed to min/max values. When disabled, they will “bounce back” from the min/max difference by the appropriate amount.
- **Direction** – sets direction of value change to down, up, or both.

### 3.4.4 Patch



The new value will be picked between min and max values when the minimum is taken from the first patch specified and the maximum is taken from the second.

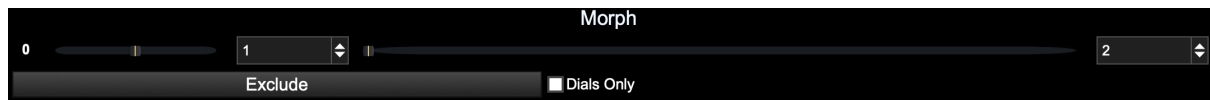
- Patch Select 1 – the first patch number to use
- Affinity – whether the value tends to favour patch 1 (-ve) or patch 2 (+ve)
- Patch Select 2 – the second patch number to use
- Noise – how often (%age) the affinity is ignored to pick a completely random value. Negative values still obey the bounds of min/max from patch 1 and 2, positive values will pick a value from min to max of the parameter.

### 3.4.5 Exclude



Pressing the **EXCLUDE** button will enter exclude mode where each control or section be individually excluded from the randomisation. Controls highlighted in blue are included. To toggle the inclusion/exclusion of a control, simply click on it.

## 3.5 Morph



It is possible to morph between 2 patches using the controls provided.

Noise – How often (%) the min/max values of the patches are ignored to pick a random value. Negative values still obey the bounds of min/max from patch 1 and 2, positive values will pick a value from min to max of the parameter.

- Patch Select 1 – the first patch number to use
- Morph bar – Left is fully patch 1, right is fully patch 2 – in-between is where the magic can happen
- Patch Select 2 – the second patch number to use
- Dials Only – enabling this will disable all dropdowns from morphing
- Exclude – Allows individual controls to be excluded from the morph (see section 3.4.5)

## 3.6 Favourites

Up to 16 global favourites can be stored along with 16 favourites per plugin instance when using VST/AU.

1	+	VHS Pad	X	9	+	<Empty>	X	1	+	Baseline	X
2	+	Major Bass	X	10	+	<Empty>	X	2	+	Scandi Arp	X
3	+	Film Board Lead	X	11	+	<Empty>	X	3	+	Pluck Me	X
4	+	<Empty>	X	12	+	<Empty>	X	4	+	<Empty>	X
5	+	<Empty>	X	13	+	<Empty>	X	5	+	<Empty>	X
6	+	<Empty>	X	14	+	<Empty>	X	6	+	<Empty>	X
7	+	<Empty>	X	15	+	<Empty>	X	7	+	<Empty>	X
8	+	<Empty>	X	16	+	<Empty>	X	8	+	<Empty>	X

These plugin favourites are unique to each instance of the plugin allowing you to store and recall 16 sounds specific to each set that you work on. This gives you total confidence to be able to recreate the sounds in your track at a future point whatever happens to the internal state of the synth.

The 16 global favourites and 16 plugin presets can be recalled via the use of Program Change messages (see 4.1).

Press the + button next to a slot in order to store the current edit buffer contents into that slot. Press the X button next to a slot to clear that slot.



## 3.6.1 Browser

The browser provides patch browse and management functionality.

The patch browser allows for browsing the patches loaded into the editor and for those on disk, providing a powerful librarian.

Internal	Organise	A000: MYXSQB	A001: Random Decay	A002: Bassix	A003: Basseven	A004: Dirty Organ	A005: Giraffe	A006: Billy	A007: Bunker Bass
Category	Filter	A008: CollmangoBass	A009: Acid	A010: Bentley Bass	A011: Sea Bass	A012: Harmony Bass	A013: Tables	A014: Action Figure	A015: Fizzy Bass
[All]		A016: Chocola Bass	A017: DikkeSapBass	A018: Warm Bass	A019: OakCity	A020: Jericho	A021: Subterrainian	A022: Whitestar	A023: ElectBass
Genre	Rating	A024: Growl bass HD	A025: Subby	A026: MiniLeadBass	A027: Dust Buster	A028: Kickers	A029: String Pad	A030: Sweet Pad	A031: Juno Strings
[All]	[All]	A032: Play Chord Hits	A033: PlayChord-Hits2	A034: Hydro Funk	A035: Arp Food	A036: Strobing Riser	A037: Uber Basic	A038: Sync Tone	A039: Classic Tech XS
Pack	Colour	A040: Horror Pad XS	A041: Biosphere XS	A042: RingMod Hlt	A043: House Stabs	A044: Barnard Castle	A045: NeonLights	A046: Doughnut	A047: Action Figure
[All]	[Default]	A048: Random Decay	A049: BassOSC	A050: Bassix	A051: Sea Bass	A052: Dust Buster	A053: Headfire Phase	A054: Kaleida	A055: Shiver Keys
DB		A056: Busted Tape	A057: Gettin Old	A058: Wobbly Marimba	A059: Lecypee	A060: Bendy Piano	A061: Zombie Keys	A062: String Machine	>> 2/34

Files scanned by the browser are:

- Single sysex files (from editor or Novation components)
- Sysex bank files (from editor or Novation components)
- XML storage files (from editor – see section 2.3.2).

## 3.6.2 Operation

### 3.6.2.1 Internal/Storage

Switch between browsing the patches in the editor and those on external storage.

When viewing external storage, patches that are in the internal banks of the editor will be highlighted to indicate they are in use. The internal slot will be indicated when you hover over the patch.

Additionally, hovering over entries in external storage mode will show the pack the patch belongs to.

### 3.6.2.2 Category

Choose a category to filter by.

### 3.6.2.3 Genre

Choose a genre to filter by.

### 3.6.2.4 Pack

Pack lists the folders the patches are stored in, or the name of the sysex file containing a bank of presets and allows filtering by these.

Only enabled when in storage mode.

### 3.6.2.5 Filter

Allows patches to be filtered via name.

### 3.6.2.6 Rating

Allows patches to be filtered via a rating.

Ratings are implemented by the software itself. Patches fetched from the synth will not have initial rating information.

### 3.6.2.7 Colour

Colouring to apply to the entries in the browser:

- Default: Duplicate patches are coloured in red, init patches are shown in white.
- None: No colouring
- Category: Entries are coloured according to category
- Genre: Entries are coloured according to genre

It is possible to change the colour assignments in the organiser (see 3.6.4).

### 3.6.2.8 DB

Brings up DB configuration for specifying patch locations (see section 3.6.3).

Only enabled when in storage mode.

### 3.6.2.9 Organise

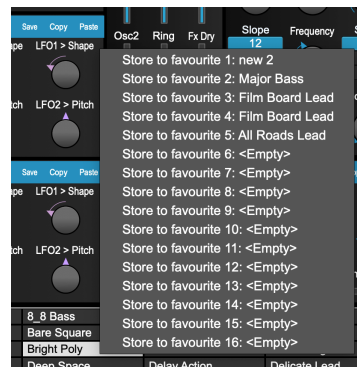
Brings up the organiser (see section 3.6.4).

### 3.6.2.10 Right-hand Mouse Menu

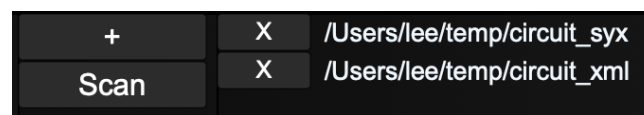
Clicking on a browser entry with the right-mouse button will allow the following operations to be performed:

- Copy/Paste patches
- Assign genre
- Assign rating
- Copy to favourites

Assigning genre and rating can be applied to multiple patches at the same time.



## 3.6.3 Browser Configuration



Click the X button next to a directory to remove it from scanning.

### 3.6.3.1 +

Use this button to add new directories for scanning.

Scan configured directions for patches.

### 3.6.4 Organiser

The organiser allows the internal patches in the editor to be organised.

[illegible]

The screen is split into 2 panels.

The left panel can be used to internal patches (either free flowing or in banks), external patches, a file browser for searching for patches, and user banks.

The right panel can view internal patches and user banks.

Selections can be made via use of the mouse in combination with the SHIFT and CMD/CTRL keys.

Selections can be dragged from one panel to the other to update the patches in the panel.

The normal drag operation is to swap patches with source and destination, but this can be modified:

- CMD/CTRL insert source patches into destination
- SHIFT copy source patches over destination

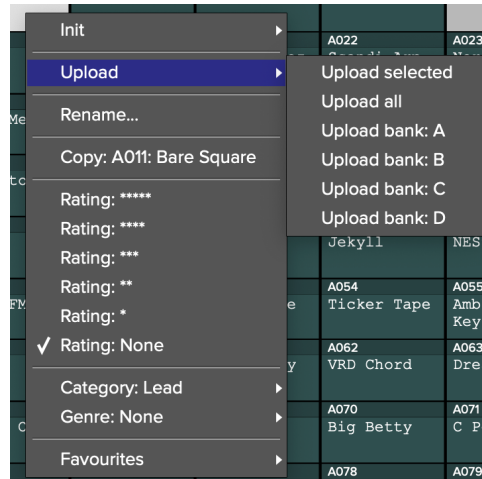
The contents of the left panel can be filtered by the controls on the left-hand side.

Counts are given for a high-level overview of your patch organisation:

[All]
None (387)
Arp (11)
Bass (26)
Bell (3)
Classic (3)
DrumPerc (7)
Keyboard (10)
Woodwind (15)

For category and genre, it is possible to assign your own colours via a SHIFT-click on an entry.

### 3.6.4.1 Right-hand Mouse Menu



Clicking on an organiser entry with the right-mouse button will allow the following operations to be performed:

- Init patch/bank/selection/all
- Upload patch/bank/selection/all
- Rename patch
- Copy/paste patches
- Assign category
- Assign genre
- Assign rating
- Copy to favourites

Assigning category, genre and rating can be applied to multiple patches at the same time.

### 3.6.4.2 User banks

It's possible to easily create banks of patches for storage and retrieval in the future.

User	Bank1	New	Delete	Save	Bank1	Export
000 Pin Tweaks	001 Tension	002 Hyde	003 Idiot Spanner	004 Console Wars	005 Temple Bells	006 Modular Perc

Banks are stored by default in .xml format but can be exported as sysex files compatible with components by using the **EXPORT** button.

## 3.7 V-Macros

Up to 8 virtual macros can be defined per patch. Each virtual macro can be set to control up to 4 parameters on Circuit (selected via buttons **A-D**), and the start, end and depth of each parameter can be controlled.

The virtual macros operate like the built-in circuit macros with two differences:

- 1) Any control on Circuit can be used as a destination
- 2) V-Macros only operate whilst the editor is running

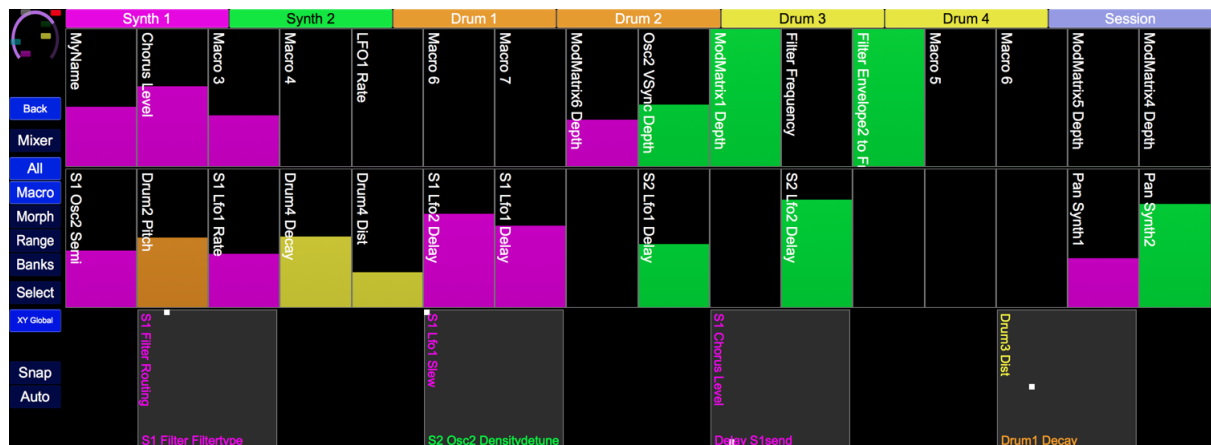


## 3.8 Perform

Perform mode is primarily designed for touch screen users but can be used by anyone wishing to provide a simple view for performance control of the Circuit rather than patch editing and management.

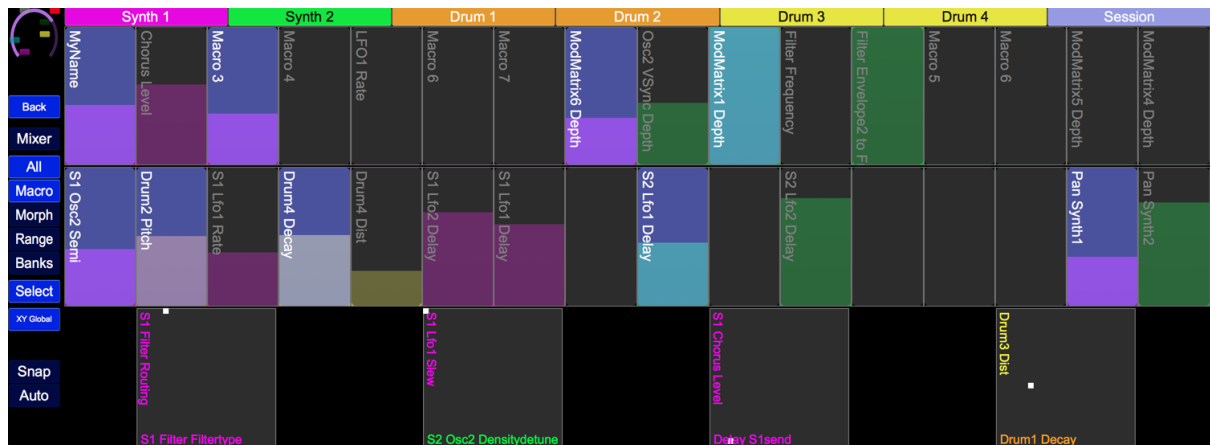
This mode consists of:

- Access to all 16 macros
- Access to 16 user-defined control mappings
- Access to 8 V-Macro controls
- Access to 4 user-defined XY controls
- Access to Session morphing
- Custom control morphing
- Mixer and Delay/Reverb sends
- Snapshot and Autoreset functions
- Patch & session loading



## 3.8.1 Zooming Performance Controls

Pressing the **SELECT** button will allow you to select which controls are on display. If no controls are highlighted, all controls are displayed.

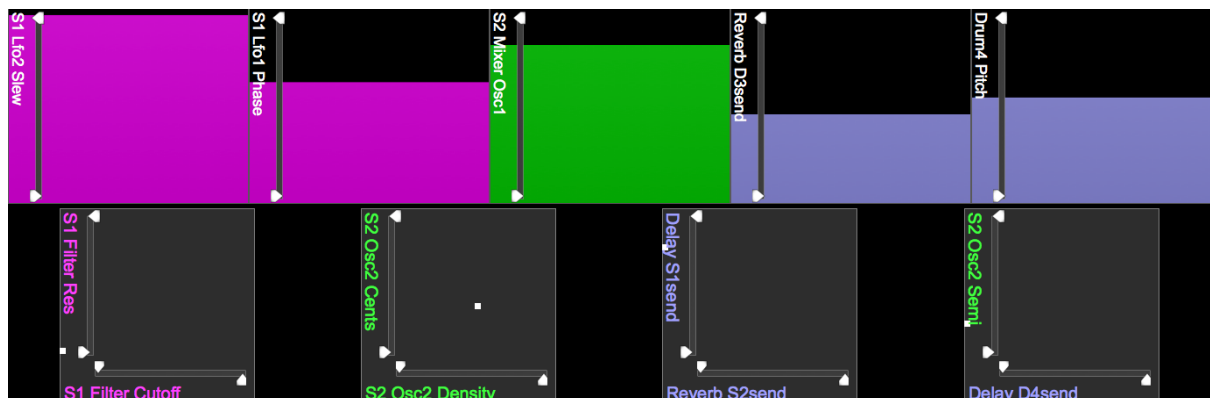


Pressing **SELECT** again will display the controls you have selected.



## 3.8.2 Setting Range of Performance Controls

Pressing the **RANGE** button will superimpose range sliders on the mapped custom and XY controls allowing you to set the minimum and maximum %age value of the control.



### 3.8.3 Morphing

Enabling the **MORPH** button will add two morph sliders to the display – the left slider will morph between two custom parameter banks (see section 3.8.4) and the right slider will morph between two specified session presets.

Pressing the **EXCLUDE** button under the left morph control will change the **SELECT** buttons under the custom sliders into **EXCLUDE** buttons. It is then possible to define custom controls that are excluded from the morph operation.

### 3.8.4 Custom Banks

Up to 16 banks of custom parameter values can be stored and retrieved. It is also possible to morph between two banks.

Press the **BANKS** button to bring up the controls for storing banks which operate in a similar way to other banking controls.

### 3.8.5 Selecting Main View

It is possible to rotate through three view modes for the Performance Mode, accessible from the top control button:

- All: Shows all sliders and XY controls
- Slider: Shows all sliders
- XY: Shows XY controls

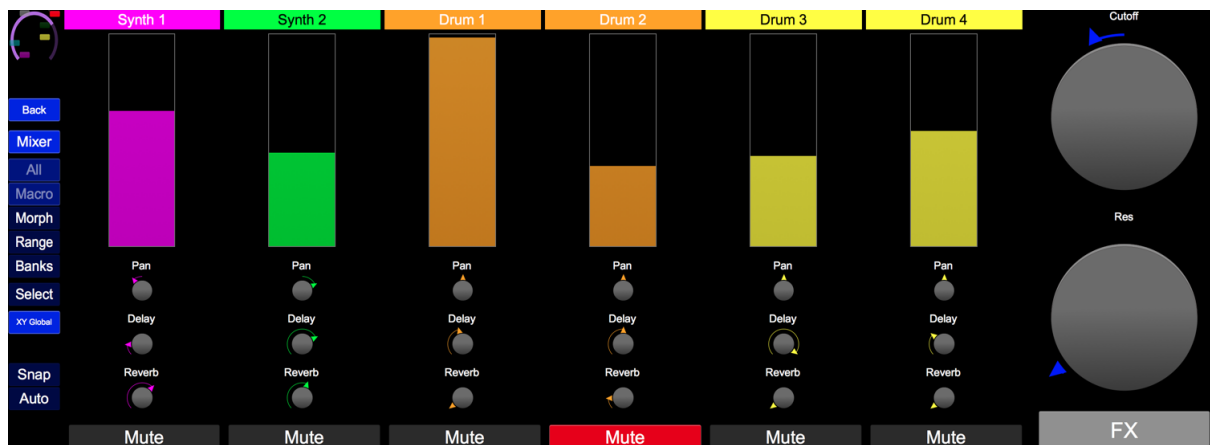
### 3.8.6 Selecting Slider View

### 3.8.7 XY Controls

Pressing the **XY GLOBAL** button will toggle between viewing the global XY controls and those that have been assigned to a patch. It is possible to select which patch controls are used for the XY controls via the selection button underneath.

### 3.8.8 Mixer

Pressing the **MIXER** button will switch to mixer view.





From here you can control the level, pan, delay, reverb and mute for each channel, the master filter/resonance, and whether FX is enabled or disabled.

Mutes operate as they do for the rest of performance mode and are documented in section 3.8.11.

### 3.8.9 Snap(shot)

Engaging snapshot using the **SNAP** button will take a snapshot of the current performance controls: macros, custom controls, XY controls, channel levels, delay sends, reverb sends, mute states, master filter.

You are then free to change any of these controls and have them all reset back to their value when you engaged snapshot by another press of the button.

### 3.8.10 Auto(reset)

Engaging Autoreset via the **AUTO** button will reset each supported control (macros, custom controls, XY controls) to a specified value when the control is released.

The reset value for each control can be set by **SHIFT** clicking the control for macros and custom controls, and **SHIFT-CMD/CTRL** clicking on the XY for XY controls.

**Touch-screen users:** The reset values are set with a long-press of the **AUTO** button. Any controls being operated at this point will have their values updated.

### 3.8.11 Mutes

The six buttons across the top can be used to mute each channel on Circuit. When muting the appropriate button will flash red.

Please note this is a 'soft' mute as it's not possible to directly control the mutes. Instead, the channel volume is set to 0 for mute and then reset to its current level when unmuted.

Due to technical limitations, it is not possible to get the current volume levels from Circuit so there are defaulted to 100 at startup. These values are updated under the following circumstances:

- Changing the level sliders in the Session page
- Loading an editor Session
- Moving the controls on Circuit

**Note:** changing any volume level either in the editor or in performance mode will disable the mute.

### 3.8.12 Patch & Session Selection

Synth patches can be loaded by **SHIFT** clicking the **SYNTH 1** and **SYNTH 2** buttons. Sessions can be loaded by clicking the **SESSION** button.

When loading a session, holding down the **SHIFT** key will skip the loading of the synth patches and drum patches that are associated with that session.

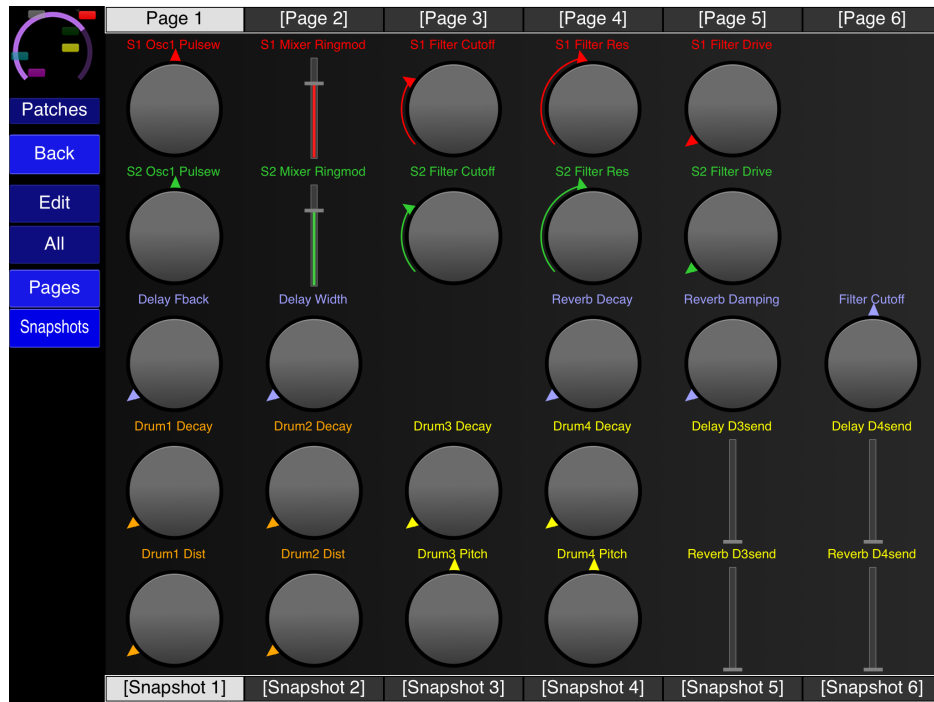
**Touch-screen users:** To load synth patches hold down the **SELECT** button and then press **SYNTH 1** or **SYNTH 2**.

## 3.9 User Layouts

Each user layout consists of a grid of controls that can be from 2x2 in size up to 8x8.

When running the demo, the following limitations are imposed:

- Only 1 page is available
- Only 1 snapshot is available



Clicking on the appropriate page button will load the page. SHIFT-clicking the button will allow the page to be named. Pages that are not defined (i.e. are empty) are indicated by [].

Pressing the **PAGES** button will toggle the display of the page selector at the top of the screen.

Pressing the **SNAPSHOTS** button will toggle the display of the snapshot selector at the bottom of the screen.

Pressing the **EDIT** button will change the display into the edit display.



For each cell you can specify:

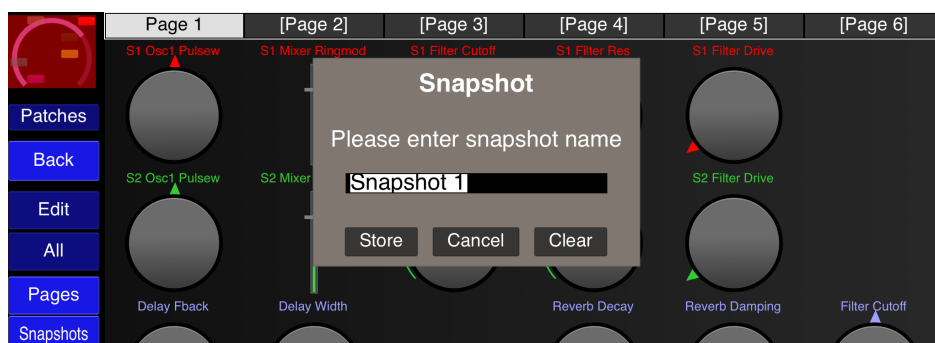
- The control to be placed in the grid cell
- How the control is to be displayed (if appropriate): Rotary, Vertical Slider, or Horizontal Slider.
- Minimum value of the control (if appropriate)
- Maximum value of the control (if appropriate)

Once editing is finished, press the **EDIT** button again to return to normal operation. All updates will automatically be saved.

### 3.9.1 Snapshots

Each page can have up to six snapshots stored. Each snapshot stores the value of each control at the time it is saved.

To create a new snapshot, SHIFT-click the appropriate slot.



You can name the snapshot at the same time as storing it or press the **CLEAR** button to clear the contents. Snapshots that are not defined (i.e. are empty) are indicated by [].

To load a snapshot simply press the appropriate snapshot button.

## 3.10 Keyboard Mode

The keyboard module allows you to send note data to Circuit.



When running the trial, the following limitations are imposed:

- Only 1 channel is available for multi-channel synths
- Chord configure is not available

The current synth channel can be selected from the channel selector along the top of the keyboard.

The following settings are per channel:

- Velocity
- Octave
- Root note
- Scale
- Chord configuration

### 3.10.1 View Mode

The following view modes are supported:

- Standard – standard keyboard layout
- Iso – Isomorphic grid layout
- Root – Root note grid layout
- Piano – Piano view grid layout

## 3.10.2 Velocity Sense Mode

Pressing the **VEL SENS** button will enter velocity sensitive mode which will display a fewer number of larger keys. When in this mode you have the option of using the fixed velocity slider (by enabling the **FIXED** button) or using dynamic velocity using the vertical position on the key to adjust the velocity being sent to the synth.

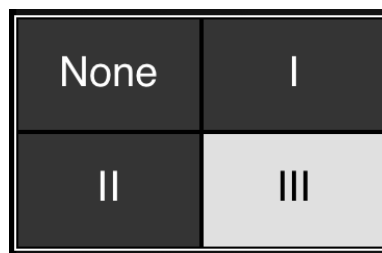
## 3.10.3 Hold/Send Off

It is possible to create held notes by holding **HOLD** whilst releasing a selected note. Any held notes on a channel can be released by pressing the **SEND OFF** button.

## 3.10.4 Chord Mode

Enabling the **CHORDS** toggle will display 8 chord selectors which can be used to play a chord from a single keyboard pad. This is momentary by default but can be set to a latch mode by using the **LATCH** button.

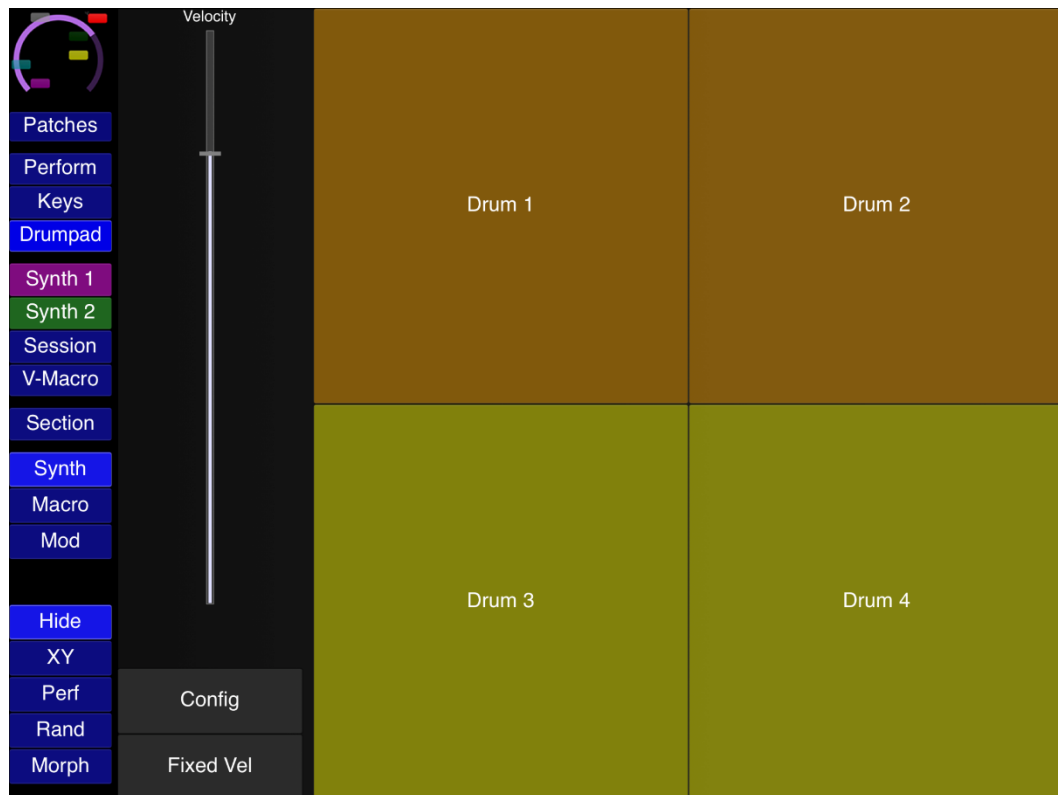
When a chord is selected, the octave selector changes to an inversion selector where any inversions for the chord can be selected.



Pressing the **CONF** button will allow a chord to be selected for each slot from those available – each chord is stored along with a selected inversion, so it is possible to store different inversions in each slot.

## 3.11 Drumpad

The drumpad module allows you to send drum data to Circuit.



Each drumpad can have its own velocity specified if the **FIXED VEL** button is enabled. If not, the pad will generate dynamic velocity depending on the vertical position of the press on the pad.

## 3.12 Patch Management

Patch management is available either in reduced form along the top of the screen, or in a more complete form when in **FULL** mode.



### 3.12.1 Store

Store the current edit buffer at the currently selected slot. The button will turn red when there are un-stored changes.

**SHIFT**-click to rename the patch.

**CMD**-click for **STORE TO**. When storing to a different patch, the patch location is determined by the dropdown selectors to the right of the **UPLOAD** button.

## 3.12.2 Init

Init will initialise the edit buffer to a clean state (default parameter assignments as defined by Novation). This will not store the patch in a slot unless the **STORE** button is pressed.

Holding **SHIFT** and pressing **INIT** will initialise all 64 slots in the editor. **NOTE: This will overwrite all patches currently loaded in the editor.**

Holding **CMD/CTRL** and pressing **INIT** will initialise all 128 slots in the current bank.

## 3.12.3 Fetch

Fetch will fetch the current patch contents of the selected synth and update the edit buffer. This will not store the patch in a slot unless the **STORE** button is pressed.

Holding **SHIFT** and pressing **FETCH** will fetch all 64 patches from circuit and update the patch slots in the editor. **NOTE: This will overwrite all patches currently loaded in the editor.**

Holding **CMD/CTRL** and pressing **FETCH** will fetch all 128 patches in the current bank.

## 3.12.4 Upload

Allows patches to be uploaded to the Circuit for off-line access and uploads the current editor buffer as it stands. You can select which patch slot to upload to on the Circuit by the dropdown selector underneath.

Holding **SHIFT** and pressing **UPLOAD** will upload all 64 patches to the Circuit. **NOTE: This will overwrite all patches currently on Circuit.**

Holding **CMD/CTRL** and pressing **UPLOAD** will upload all 128 patches in the current bank.



## 3.12.5 Load/Save Patch

Load/save a single patch.

**SHIFT**-click to load/save sysex files that are compatible with Novation Components.

## 3.12.6 Load/Save Bank

Load/save patch banks.

**SHIFT**-click to load/save sysex files that are compatible with Novation Components.

**CMD/CTRL**-click **SAVE BANK** to save all patches to a specified folder as individual patches.

**SHIFT-CMD/CTRL**-click to save each patch as a sysex file.

**CMD/CTRL**-click **LOAD BANK** to load individual patch files from a specified folder. The numeric prefix at the beginning of the file will be used to determine the patch position.

**SHIFT-CMD/CTRL**-click to load sysex pattern files.

### 3.12.7 Name/Genre/Category



The genre and category can be set via the dropdowns available along the top of the screen.



# 4 Host Control

If **MIDI THRU** is enabled in setup then the following information is sent from the host to Circuit:

- Note information
- CC (controller) information
- Program Change information

## 4.1 Selecting Patches from Host

Patches in the editor can be loaded into the synth by sending Program Change messages on bank 16 with a program of 0-63. Depending on how your host numbers these elements, you may need to select bank 17 and programs 1-64.

Global favourites can be loaded into the synth by sending Program Change messages on bank 32 with a program of 0-15.

Plugin favourites can be loaded into the synth by sending Program Change messages on bank 33 with a program of 0-7.

In all cases, use Program Change messages on channel 1 to load synth 1, and channel 2 to load synth 2.

## 4.2 Selecting Session Setup from Host

It is possible to select the current session setup from those loaded into the editor. **Please note this is different to loading actual sessions on Circuit and merely a way to send a defined session setup in the editor to Circuit.**

To do this, send a Program Change message for Bank 16, using program numbers 0-31 on channel 16.

# 5 Performance Control Automation

The performance controls are a collective name for the 4 XY controllers and the 16 freely assignable controls.

When it comes to automation of these parameters three different modes are available which can be chosen in the setup section.

## 5.1 None

In this mode neither the operation of the performance control or the target control is added to the host automation. Any existing automation for these controls will not be processed.

## 5.2 Target

When in this mode, automation is recorded for the target parameter, i.e. the control that is at the end of the XY/custom control. Any existing automation will playback as normal.

This is the default mode and recommended for hosts that support all VST parameters.

## 5.3 Perform

In this mode automation is recorded for the performance control itself and not for the target parameter. Existing automation will be played back for these controls which will then control the target parameters.

The main purpose of this mode is to provide flexibility in Ableton Live.

### 5.3.1 Automation and Ableton Live

Ableton Live only allows 128 parameters of a VST to be visible in Live at any time. The Circuit editor has over 700, meaning that you need to choose a set of parameters to automate.

**Please note this does not mean you cannot control all parameters from the UI or assign MIDI controllers to them, it just means that you cannot automate more than 128 parameters.**

Whilst you can create a new mapping for each project or create your own default device mapping for the VST, neither of these offers an ideal solution, especially to adding a new parameter to automate on the fly.

Allowing you to automate the performance controls gives you up to 24 easily configurable parameters per project. Just make sure that the 24 performance controls are in your set of 128 parameters available in Live and you're ready to go – assign the other 104 to your most commonly used controls and you have the best of both worlds.

## 5.3.2 Happy Accidents

The bonus of this mode is that you can easily change the target of automation and keep all the recorded data. Want to see how your filter sweep sounds when controlling filter distortion instead? Or how does the decay automation you've set up sound when controlling the LFO rate instead?

## 5.3.3 Default Map

With the 128 limit in mind, the parameters that will appear by default when you drop the plugin in are geared towards performance. You can change these by creating your own default if you wish (<https://help.ableton.com/hc/en-us/articles/209073089-How-to-save-plug-in-parameter-configurations>), but when using Live it is advised to keep the 24 performance controls somewhere in the map so you can take advantage of the dynamic assignment.

Section	Controls	Number	Notes
Performance	Custom Controls	16	
Performance	XY	8	
Session	Drum	20	
Session	Reverb	2	Decay, Damp
Session	Delay	2	Time, Feedback
Session	SideChain	4	Decay, Depth * 2
Session	Sends	12	
Session	Mixer	6	Synth 1-2, Drums 1-4
Session	Filter	2	
Synth	Macro Position	16*	
Synth	Filter	6*	Drive, Frequency, Res
Synth	Distortion	2*	Level
Synth	Chorus	6*	Feedback, Mod Depth, Level
Synth	Envelope	12*	Attack, Decay, Release
Synth	EQ	6*	Lo/Mid/Hi Gain
Synth	Mixer	6*	OSC1/2, Ring
Morph	Morph Bar	1	
Reserved	Reserved	1	

\*These are the doubled value as they are mapped for each synth engine.

# 6 Troubleshooting

## 6.1 MIDI settings on Circuit

Ensure that your Circuit is configured to receive and send MIDI – see the MIDI I/O section on page 61 of the user guide.

[https://d19ulaff0trnck.cloudfront.net/sites/default/files/novation/downloads/10690/circuit-ug-en\\_0.pdf](https://d19ulaff0trnck.cloudfront.net/sites/default/files/novation/downloads/10690/circuit-ug-en_0.pdf)

## 6.2 Try on mains as well as battery

With our other versions of the Circuit editor we've had reports of people having different experiences when using battery power vs. mains power.

## 6.3 Windows driver installed

Failure to recognise Circuit when running on windows is often down to not having the latest Windows driver installed. Please note this is different to having the latest firmware installed on Circuit.

<https://uk.novationmusic.com/circuit/circuit/support-downloads>

It is recommended that:

- You have Circuit connected whilst installing the driver
- You reboot the computer after installing the driver

This driver can sometimes be tricky to install. If you are still seeing issues after performing the above process, then please repeat.

## 6.4 Properties File

All MIDISynth configuration is stored in a properties file located in:

**Windows:** `~\AppData\Roaming\MIDISynth-xxx\MIDISynth-xxx.properties`

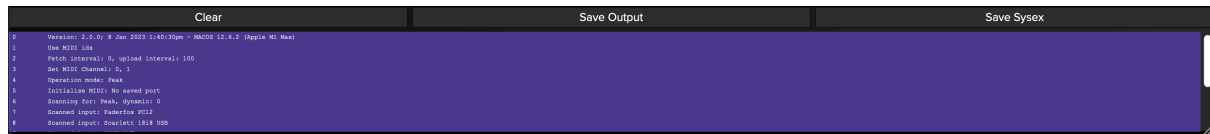
**Mac:** `~/Library/Application Support/MIDISynth-xxx.properties`

If you're having problems, it is recommended that you take a copy of this file and then remove it and see if your problem goes away. If it does, can you please send the file to [midisynth@sigabort.co.uk](mailto:midisynth@sigabort.co.uk) so that it can be examined.

## 6.5 MIDI Monitor

The MIDI monitor can be used to solve issues if you are having them. After contacting support with an issue, you may be asked to enable this and perform actions to generate (or receive) MIDI and then send logs to support.

The MIDI monitor can be enabled in the settings panel (see 2.2.14). Using the monitor will slightly affect performance so it is recommended to only enable it for trouble shooting.



After collecting MIDI data press the **SAVE OUTPUT** button to save the output which can then be sent to support.

Enable saving to sysex, if requested, by clicking the **SAVE SYSEX** button.

When enabled, fetching a patch saves the contents to:

```
~/Documents/patch_fetch.syx
```

And sending a patch saves to:

```
~/Documents/patch_send.syx
```

Send any requested files to [midisynth@sigabort.co.uk](mailto:midisynth@sigabort.co.uk)

# 7 Custom Properties File Settings

The following entries can be set in the properties file to change certain behaviour in the editor.

Make sure these lines are added before the closing `</Properties>` tag.

## 7.1 ui\_dim

Changing this value will change the automatic dim setting applied to section headers in the editor. The default value is 1.0. Valid values are from 0.0 to 1.0.

```
<VALUE name="ui_dim " val="0.5"/>
```

## 7.2 button\_corner\_size

Changing this value will change the roundedness of the corners on buttons. The default value is 7. Valid values are from 0 to n.

```
<VALUE name="button_corner_size" val="0"/>
```

## 7.3 route\_midi\_clock\_out

By default, MIDI clock messages are not routed over the Windows virtual MIDI ports as this may generate a lot of traffic and most people will not be interested in syncing the synth to the DAW clock.

To enable clock messages to be sent add:

```
<VALUE name="route_midi_clock_out" val="1"/>
```