

# VADrum2

## Virtual Analog Drum Machine



## User Guide

Version 1.0

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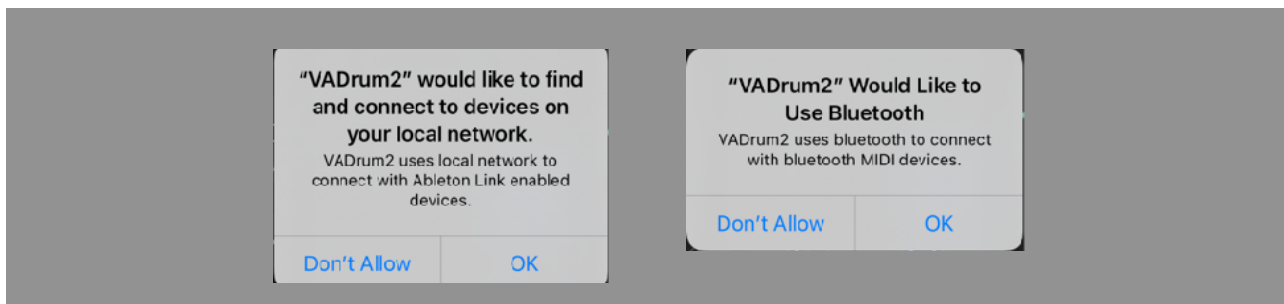
## Introduction

Thank you for purchasing VADrum2. To help you get the most out of this product, please read this manual carefully.

VADrum2 is a production tool to create drum tracks on iPhone, iPad and Mac. You can program drum sequence, mix the drum sounds and export audio file to be used for production or to be shared with your friends. VADrum2 consists of drum synthesizer, effects and a sequencer. The drum synthesizer includes 27 drum voices, which are 23 virtual analog modules and 4 sample playback modules and they are inspired by the iconic analog drum machines of the 1980's. The Effects includes delay, chorus, flanger, reverb, eq, and compressor. The sequencer allows you to program 16 bar pattern per clip and you can have total 16 clips. Project files can be saved in iCloud Drive, so that you can work on a project on iPhone, iPad or Mac whichever is convenient for you at the time. VADrum2 can be used as a stand alone or as an Audio Unit Extension (AUv3). Stand Alone supports Ableton Link, Bluetooth MIDI and MIDI IN/OUT.

## Privacy Settings

VADrum2 uses local area network to connect Ableton Link enable devices and it uses bluetooth to connect with bluetooth keyboard and controllers. When dialogue appears to confirm use of the local network and the bluetooth, tap OK to give a permission to use them. These settings can be edited in Privacy section of the Setting App.



## Main Features

### Drum Synthesizer

27 drum synthesizer modules (24 virtual analog and 4 sample playback)

### Sequencer

16 bar patterns per clip. Total 16 clips.

Parameter automation.

### Audio Export

Linear PCM format (AIFF, WAV and CAF) and compressed format (AAC)

Support iCloud Drive.

Support Universal Application (Work on iOS devices and macOS devices)

Support Ableton Link, Bluetooth MIDI, MIDI In / Out.

Support Audio Unit Extension (AUv3)

## System Requirements

iOS 14.5 or later

macOS 11.3 or later

For iOS Devices, A10 Fusion or above is recommended.

## State Recovery

When VADrum2 is used as a stand alone, it stores state of the app when the app is terminated. Stored data is recovered when it is launched at the next time. macOS version can disable this feature. The state is stored locally on the device.

## Use as Stand Alone

Stand Alone mode features Audio Export, Ableton Link, MIDI input / output and bluetooth MIDI. Sequencer can be synced with Ableton Link enabled devices and softwares. Dials and Switches of MIDI controller can be mapped to the parameters of the drum synthesizer.

## Use as AudioUnit Extension (AUv3)

VADrum2 supports AudioUnit Extensions. It works with AUv3 host applications. By enabling host sync mode, it can be synced with tempo and transport state of the host application. It can send and receive MIDI message to/from the host.

## About MIDI Latency

Sending or receiving MIDI notes and messages to Software Applications introduces a latency. If you have a problem and DAW or host application has channel delay, adjust the delay time to compensate the latency.

## Factory Preset

Factory preset has two categories, Sound and Rhythm.

Presets in Sound category contains only values of parameters. It doesn't contain any sequence data. When loading the preset, it will change the value of the parameters but sequence data remains the same.

Preset in Rhythm category contains value of parameters and sequence data.

## User Preset

User Preset contains values of parameters and sequence data. When loading user preset, value of parameters and sequence data are both changed.

User Presets can be saved in iCloud Drive or inside of the AUv3 plug-in (iOS only)

AUv3 Plug-In Preset is internally named and saved as following format, "BankName.Number.DisplayName".

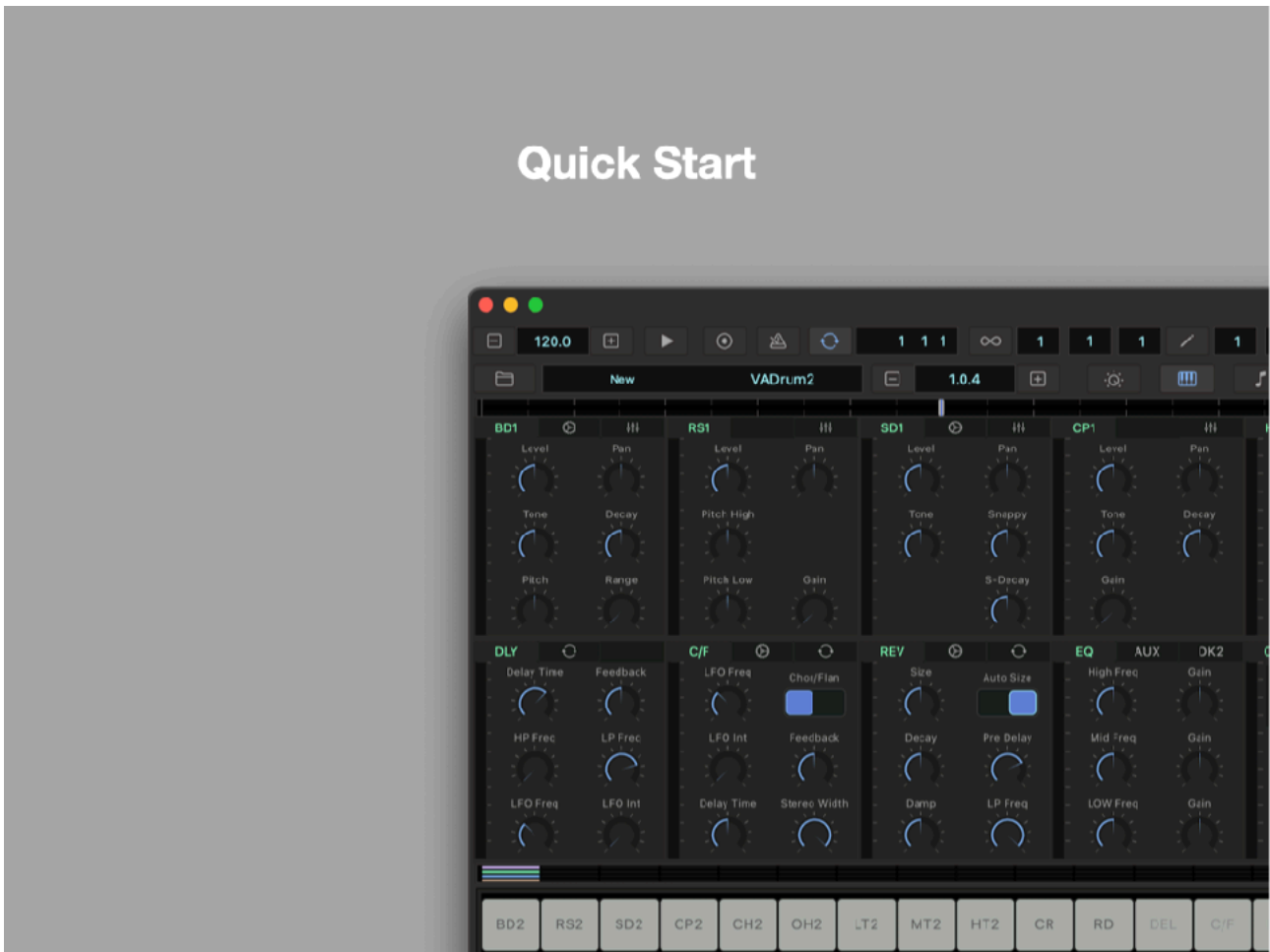
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# Quick Start

Create simple drum pattern and export audio to iCloud Drive.



# Create New...



# Set Loop and Select Bars



## Select kick drum



## Program kick drum



## Select snare drum



## Program snare drum



## Select hi-hat



## Program hi-hat



## Select Bar 1

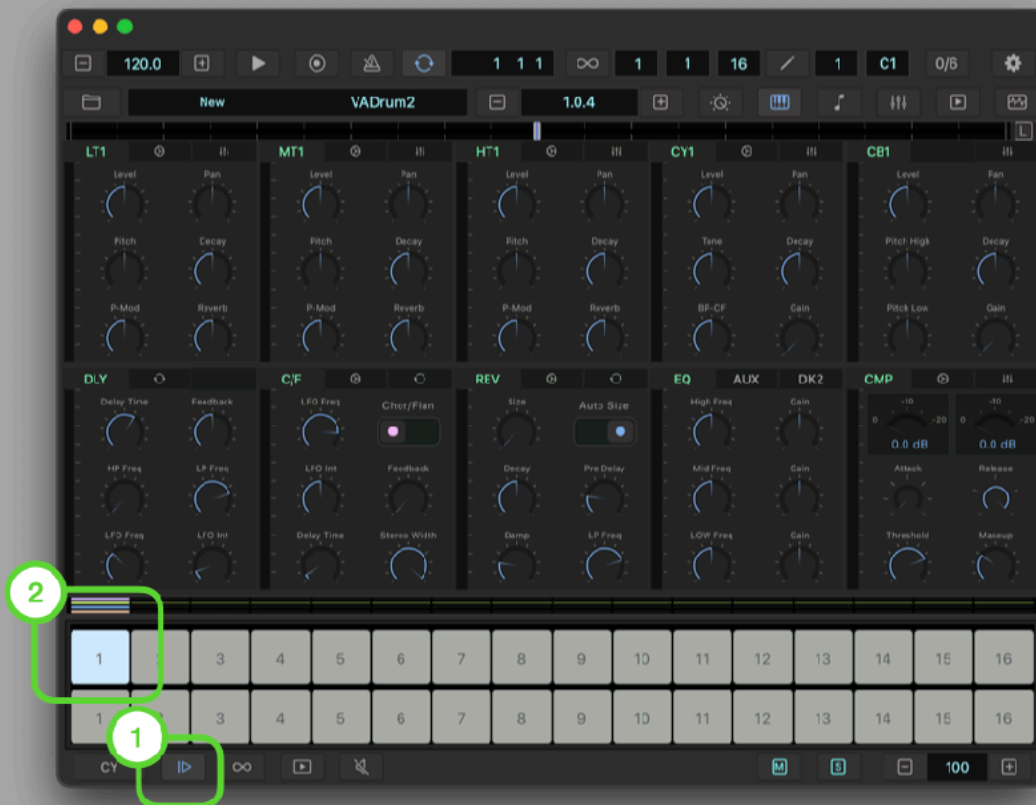


## Select cymbal





# Program cymbal



# Select Bar 9



## Program cymbal



## Add New Clip



## Load Clip 2



## Open Piano Roll Editor



## Set Loop



## Set Edit Range and Program kick drum



## Adjust Velocity



## Program snare drum



## Program hi-hat



## Select Bar 1 and Program Crash



## Program cymbal

The screenshot displays a software interface for programming a cymbal sound. The top section features a piano roll with a highlighted note on the 9th step. Below the piano roll are several control panels for different cymbal types: LT2, MT2, HT2, CR2, and RD2. Each panel includes parameters such as Level, Pan, Attack, Decay, Pitch, and Gain. Below these are processing blocks: DLY (Delay), C,F (Chorus/Flanger), REV (Reverb), EQ (Equalizer), AUX (Auxiliary), DK2 (Distortion), and CMP (Compressor). A green circle labeled '1' highlights the 'REV' parameter in the top row of controls. A second green circle labeled '2' highlights the 'RD' parameter in the piano roll area at the bottom.

## Program Parameter Automation

The screenshot displays a software interface for programming a cymbal sound with parameter automation. The top section features a piano roll with a highlighted note on the 9th step. Below the piano roll are several control panels for different cymbal types: BD2, RS2, SD2, CP2, and HH2. Each panel includes parameters such as Level, Pan, Attack, Decay, Pitch, and Gain. Below these are processing blocks: DLY (Delay), C,F (Chorus/Flanger), REV (Reverb), EQ (Equalizer), AUX (Auxiliary), DK2 (Distortion), and CMP (Compressor). A green circle labeled '1' highlights the 'OH2' parameter in the piano roll area at the bottom.



## Open Automation Edit and Adjust OH Decay

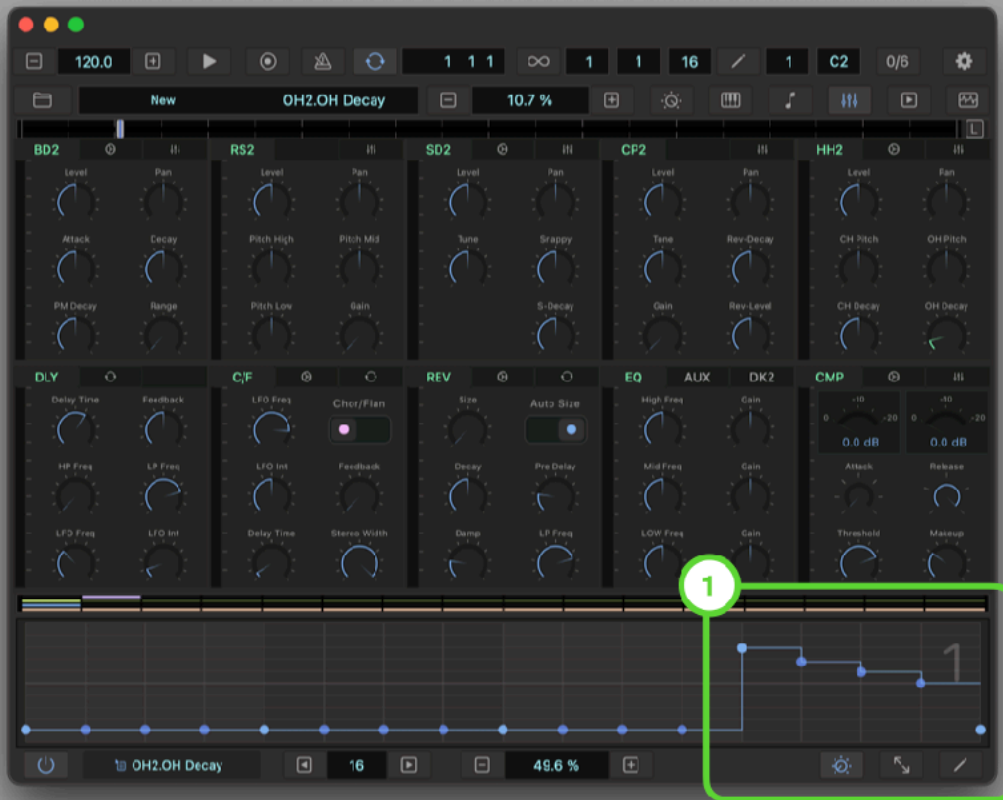


## Set Edit Range and Reset Parameter Values





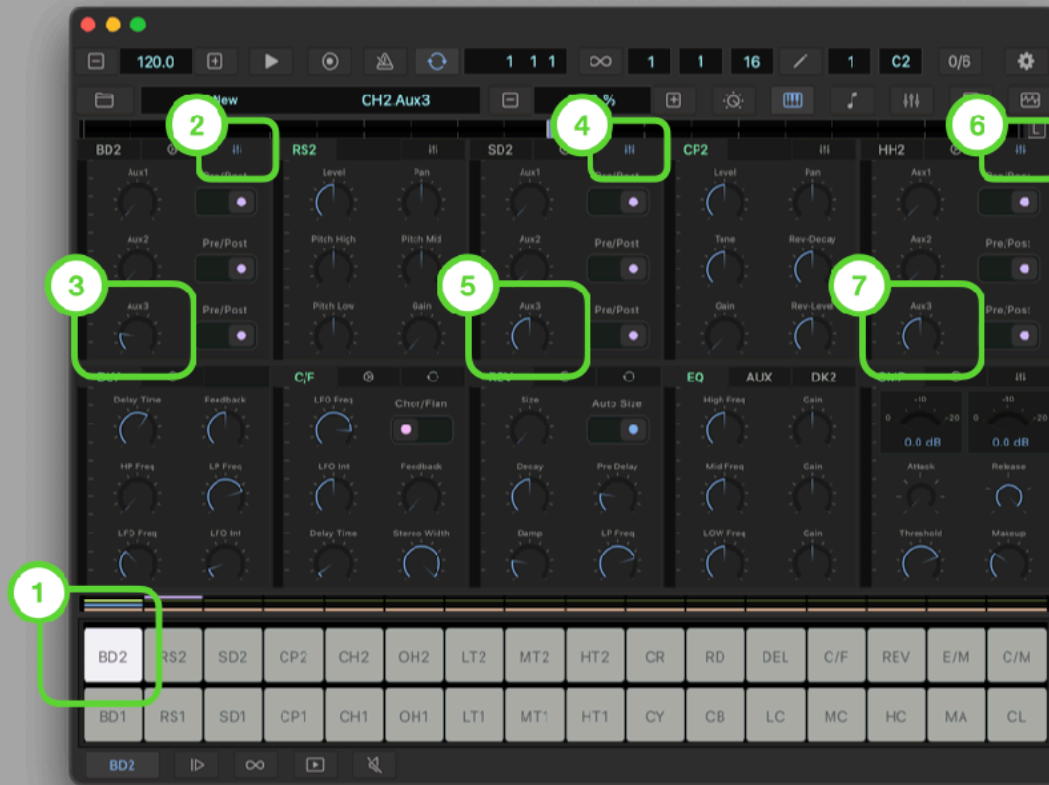
## Program Parameter Automation



## Adjust AUX3 Send Level



## Adjust AUX3 Send Level



## Adjust AUX3 Send Level



## Adjust AUX3 Send Level



## Adjust Reverb



## Adjust Reverb



## Adjust Compressor



## Adjust Compressor



## Adjust Tempo and Set Clip Length



## Adjust Tempo and Set Clip Length



## Audition the Result



## Open Export Audio Panel



## Open Export Audio Panel

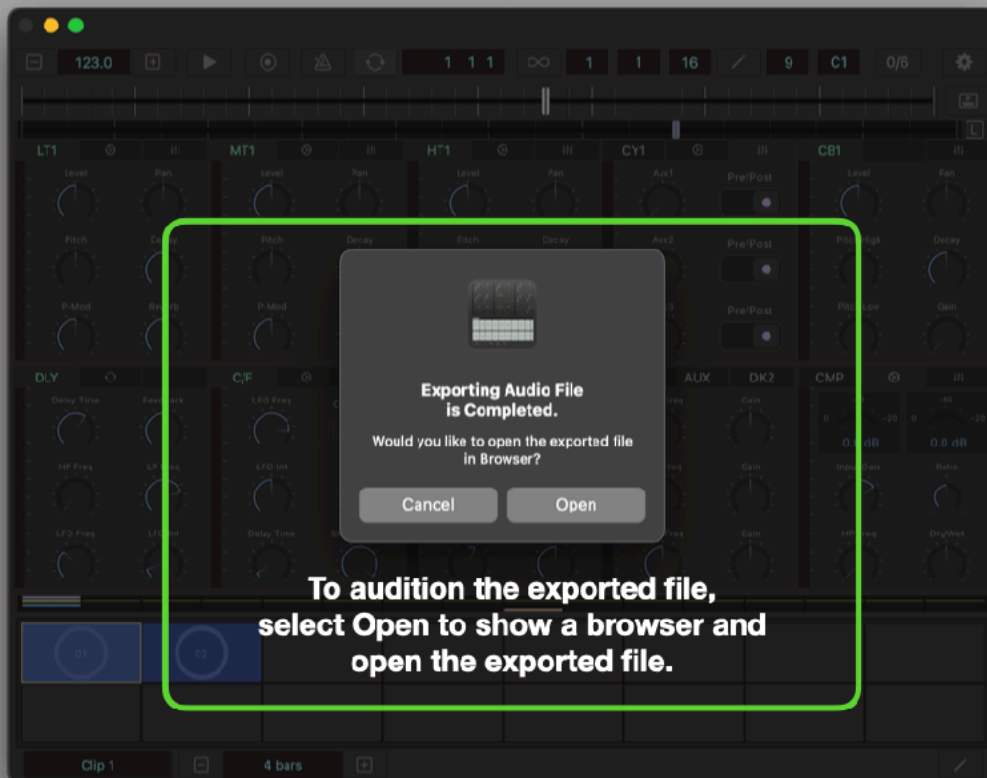




## Adjust Export Audio Settings

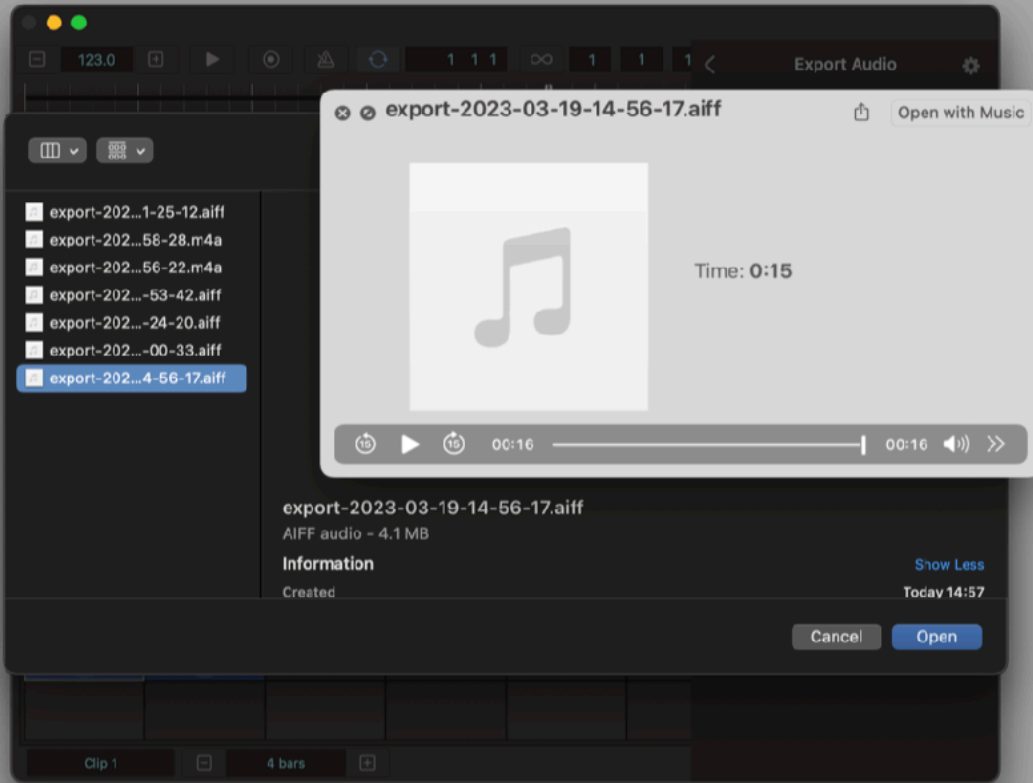


## Export Audio





# Export Audio



# Save your work



# Save your work



# Program Sequence

## Step Recording

### 1. Set loop length



Select loop mode in keypad. Use top 16 pads to select loop length.

### 2. Select bar



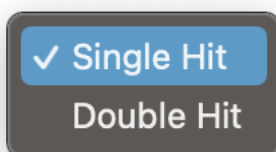
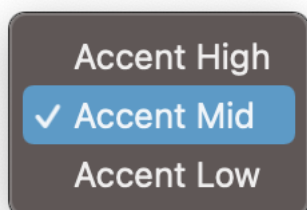
Select loop mode in Keypad. Use bottom 16 pads to select bar(s) for editing.

### 3. Select voice



Select voice selection mode in Keypad. Select a voice for editing.

#### 4. Select Accent and hit type



Select step recording mode in Keypad. Select accent and hit type from menu.

Accent High set velocity to 127.

Accent Mid set velocity to 100.

Accent Low set velocity to 60.

Select single hit to program 16th note.

Select double hit to program two 32nd notes.

#### 5. Program notes



Use 32 pads to program notes for 2 bars.

# Piano Roll Editor

## 1. Select loop length



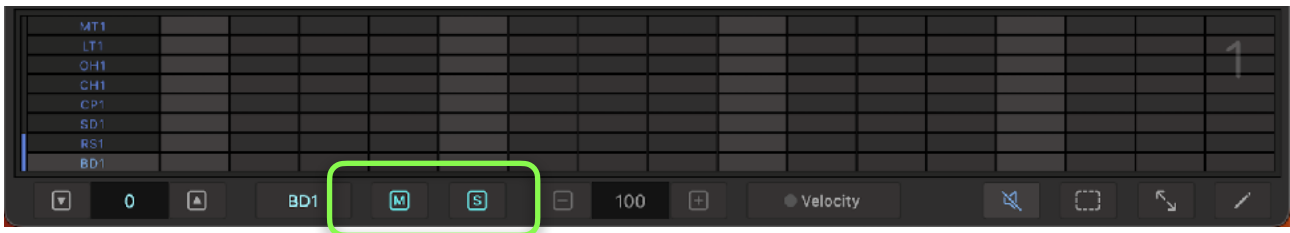
Tap loop button in transport bar to open loop selector. Use 16 pads to select loop length.

## 2. Select bar



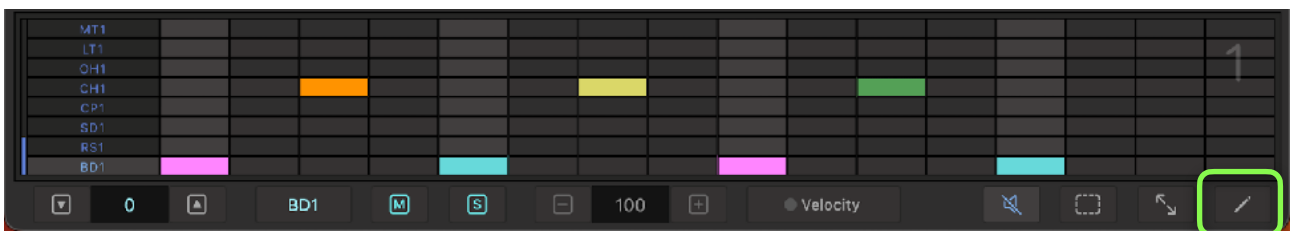
Tap edit button in transport bar to open bar selector. Use 16 pads to select a bar for editing.

## 3. Select accent and hit type



Select accent and hit type from menu.

## 4. Program notes



Tap on a grid to program a note. Tap on the note to delete the note.

To program multiple bars in piano roll editor, select bars in bar selector and program notes.

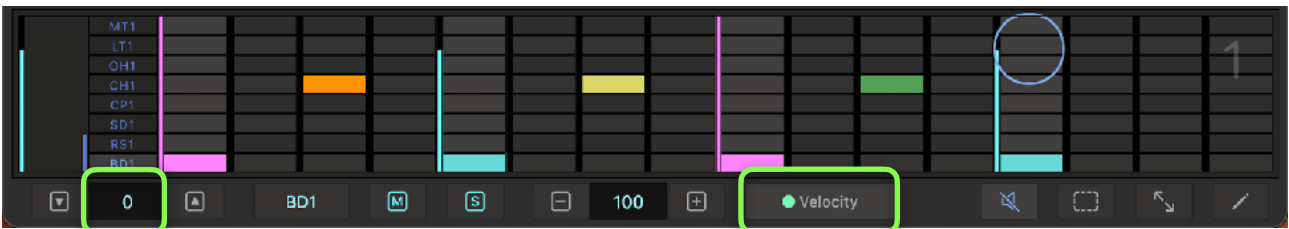
To program triplet for the bar, select Triplet from the edit menu.

Triplet in Edit Menu.



---

## 5. Adjust velocity



Tap on velocity switch to enable velocity mode. Tap a key on keyboard to select a voice. Tap on the note to show control. Drag the blue control to adjust velocity of the note. Value of the velocity is shown in the indicator at the bottom. Use plus / minus button to make fine adjustment.

---

## 6. Program Notes in selection mode

Double tap to add a note.

---

## 7. Show / Hide Overview



Tap overview button to show / hide overview.

---

## Editing Notes in Overview

Tap selection button and use selection rectangle to select notes.  
Move selected notes.  
Copy, paste and delete the selected notes.

# Edit Selected Notes

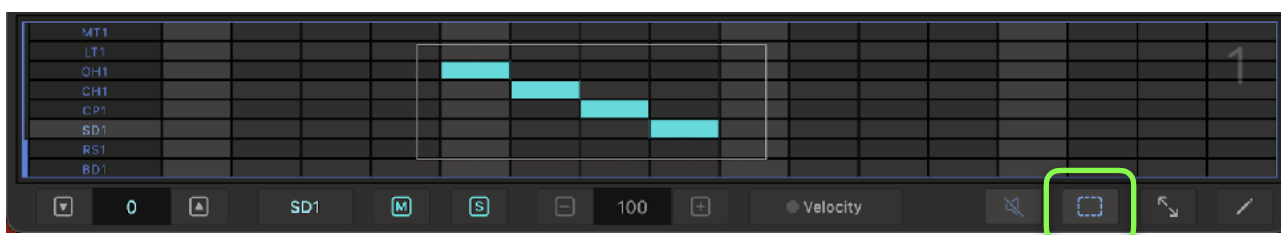
## Move

### 1. Select bar



Tap edit button in transport bar to open bar selector. Select a bar to edit.

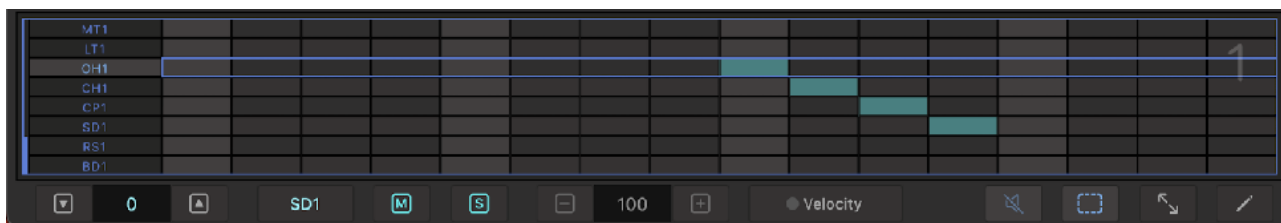
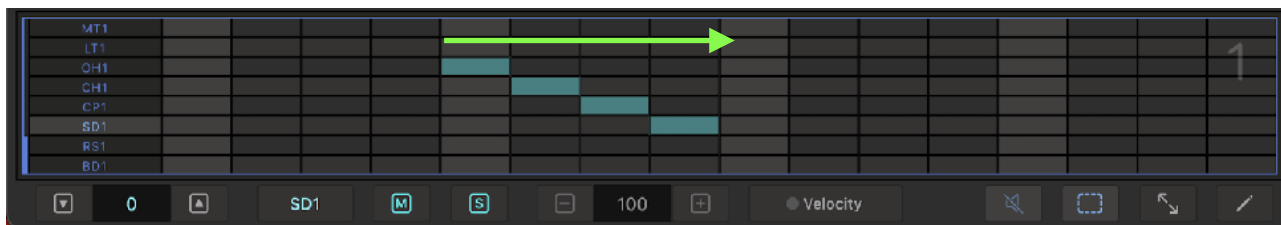
### 2. Select Notes



Tap select button to enable selection mode. Drag selection rectangle to select notes.

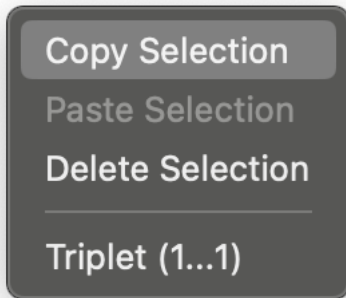
## Move

### Move Selected Notes



Drag and move the selected notes.

## Copy



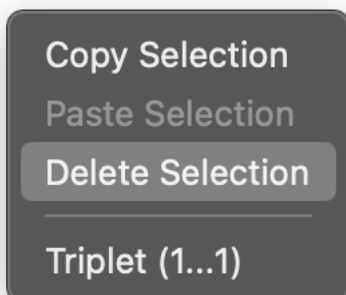
Tap edit button in piano roll editor to open edit menu. Select “Copy” from the menu.

## Paste



Drag selection rectangle to specify location to paste. Tap edit button in piano roll editor to open edit menu. Select “Paste” from the menu.

## Delete



Tap edit button in piano roll editor to open edit menu and select “Delete” from the menu.



# Edit Sequence in the selected bar

## Copy

1. Select range (bars)



Tap edit button to open bar selector. Select range to copy.

2. Select Copy



Tap edit button in piano roll editor to open edit menu. Select “Copy” from the menu. Numbers in Parentheses indicates the specified range. (start ... end)

# Paste

## 1. Select range (bars)



Tap edit button to open bar selector. Select range to paste.

## 2. Select Paste



Tap edit button in piano roll editor to open edit menu. Select “Paste” from the menu. Numbers in Parentheses indicates the specified range. (start ... end)

### Note:

When selected range for the paste is larger than the range of the copied data, the data is pasted repeatedly to fill the specified range. For example, if copy buffer contains 2 bars of data (bar 1 and 2) and 8 bars (from bar 3 to bar 10) are specified as the paste range, data will be pasted 4 times. (bar 1 and 2) -> [(bar 3 and 4) (bar 5 and 6) (bar 7 and 8) (bar 9 and 10)]  
This behavior applies to all copy and paste functions.

# Delete

---

## 1. Select range (bars)



Tap edit button to open bar selector. Select range to delete.

---

## 2. Select Delete



Tap edit button in piano roll editor to open edit menu and select “Delete” from the menu. Numbers in Parentheses indicates the specified range. (start ... end)

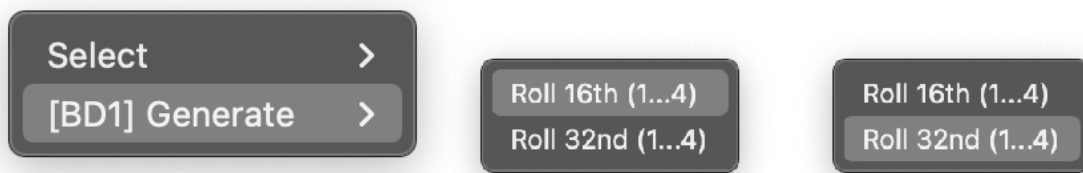
# Generate Roll

## 1. Select range (bars)



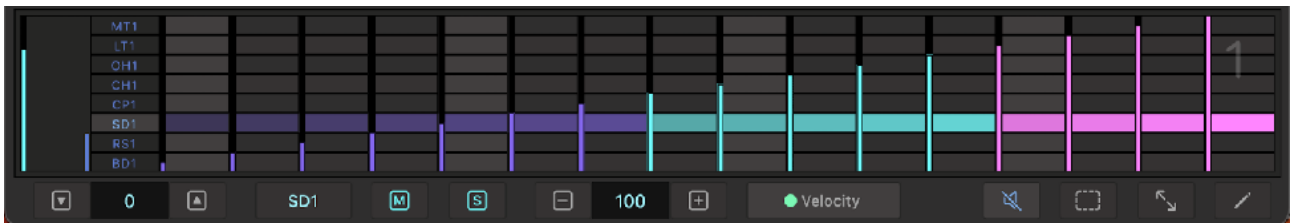
Tap edit button to open bar selector. Select range to generate roll.

## 2. Select Roll

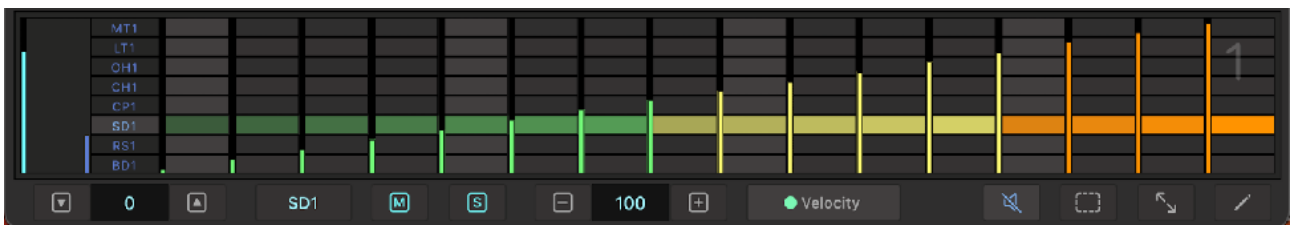


Tap voice button in piano roll editor to open voice menu. Select “[Voice] Generate” then select “Roll 16th” or “Roll 32nd” from the menu. Numbers in Parentheses indicates the specified range. (start ... end)

Roll 16th generate 16th note roll for the selected bars.



Roll 32nd generate 32nd note roll for the selected bars.



# Parameter Automation

## Program parameter automation

### 1. Select loop range



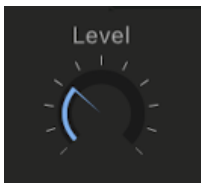
Tap loop button in transport bar to open loop selector. Use 16 pads to select loop length.

### 2. Select a bar



Tap edit button in transport bar to open bar selector. Use 16 pads to select a bar for editing.

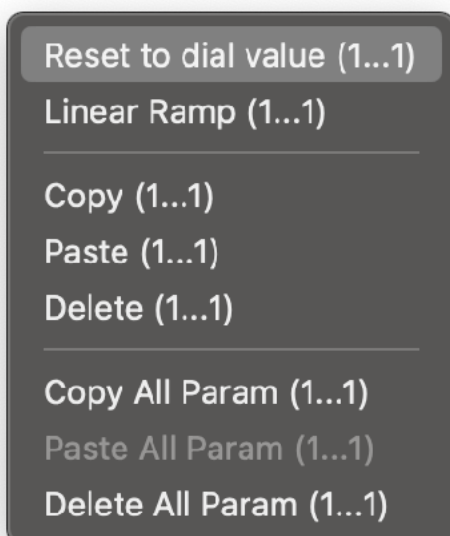
### 3. Select dial or toggle switch



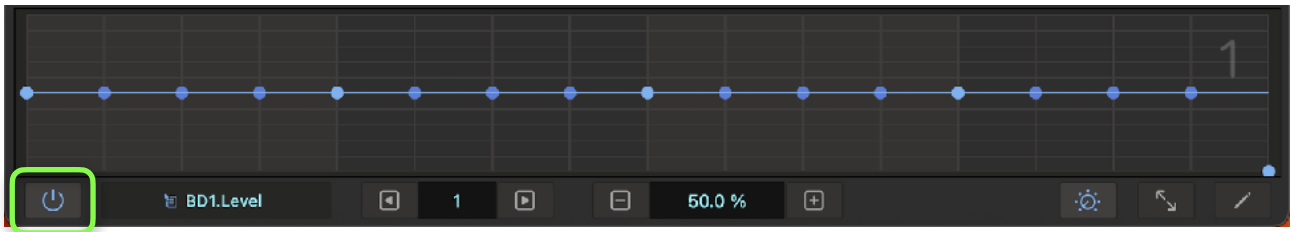
Turn dial or switch of a parameter to automate.

### 4. Reset to dial value

Tap edit button in automation editor to open edit menu. Select “Reset to dial value” from the menu. Numbers in Parentheses indicates the specified range. (start ... end)

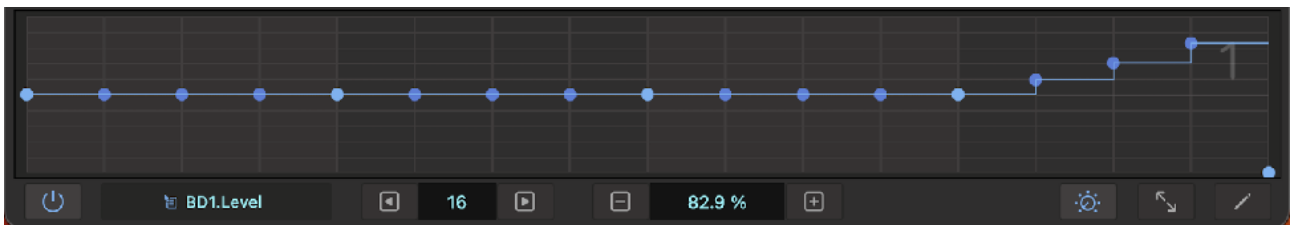


## 5. Activate automation



Tap power button in automation editor to activate automation of the parameter.

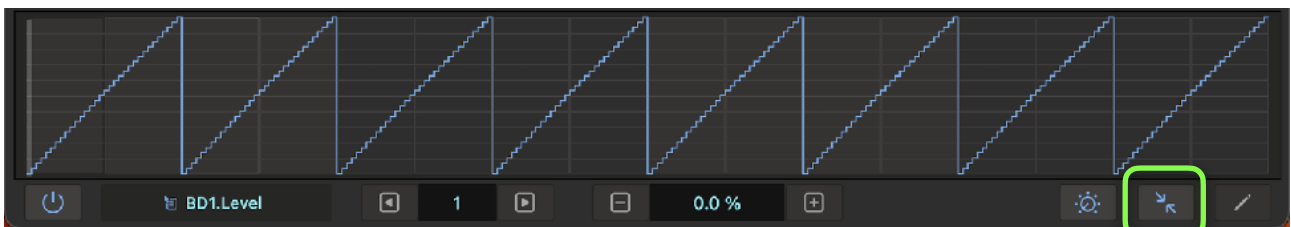
## 6. Program automation



Adjust value of the parameter per step.

To program multiple bars in automation editor, select bars in bar selector.

## 7. Show / Hide Overview



Tap overview button to show / hide overview.

# Edit parameter automation

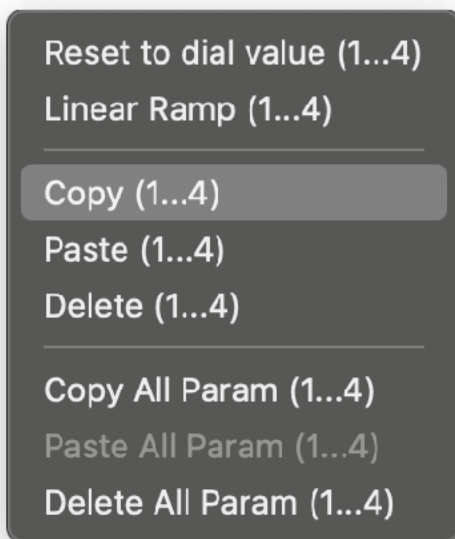
## Copy

1. Select Range (bars)



Tap edit button to open bar selector. Select range to copy.

2. Select Copy



Tap edit button in automation editor to open edit menu. Select “Copy” from the menu. Numbers in Parentheses indicates the specified range. (start ... end)

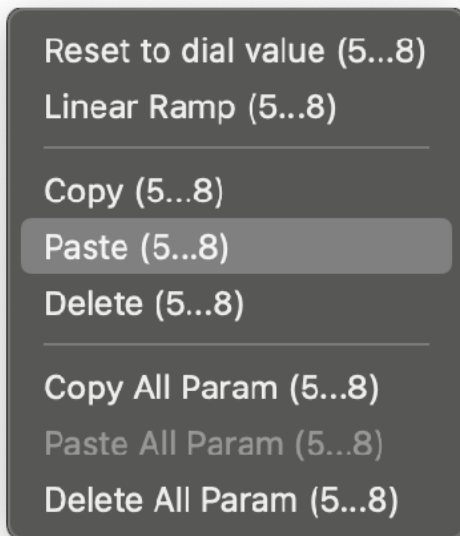
## Paste

### 1. Select Range (bars)



Tap edit button to open bar selector. Select range to paste.

### 2. Select Paste



Tap edit button in automation editor to open edit menu. Select "Paste" from the menu. Numbers in Parentheses indicates the specified range. (start ... end)



---

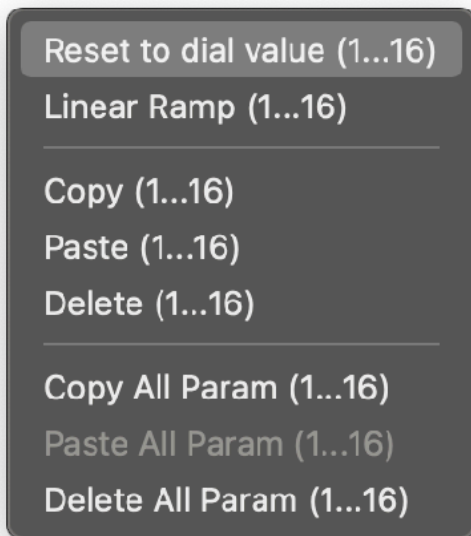
## Reset to dial value

1. Select range (bars)



Tap edit button to open bar selector. Select range for editing.

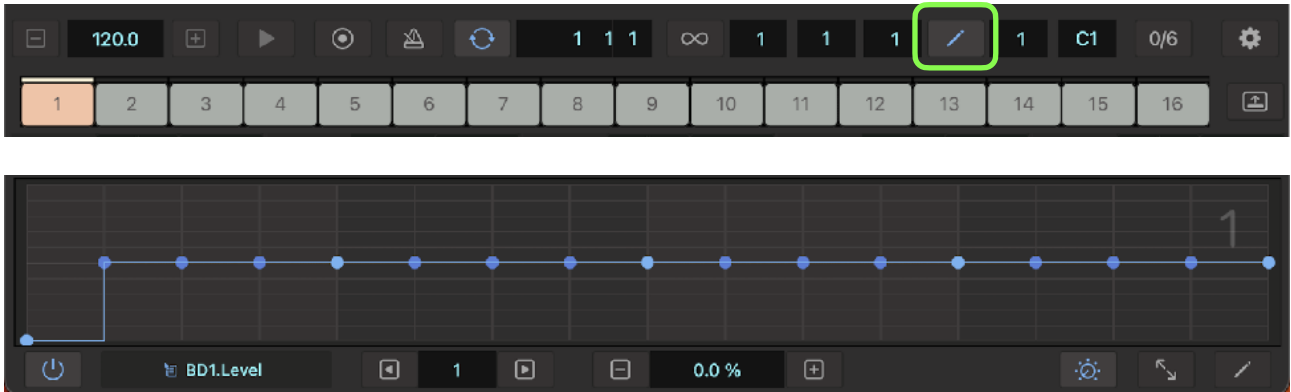
2. Select “Reset to dial value”



Tap edit button in automation editor to open edit menu. Select “Reset to dial value” from the menu. Numbers in Parentheses indicates the specified range. (start ... end)

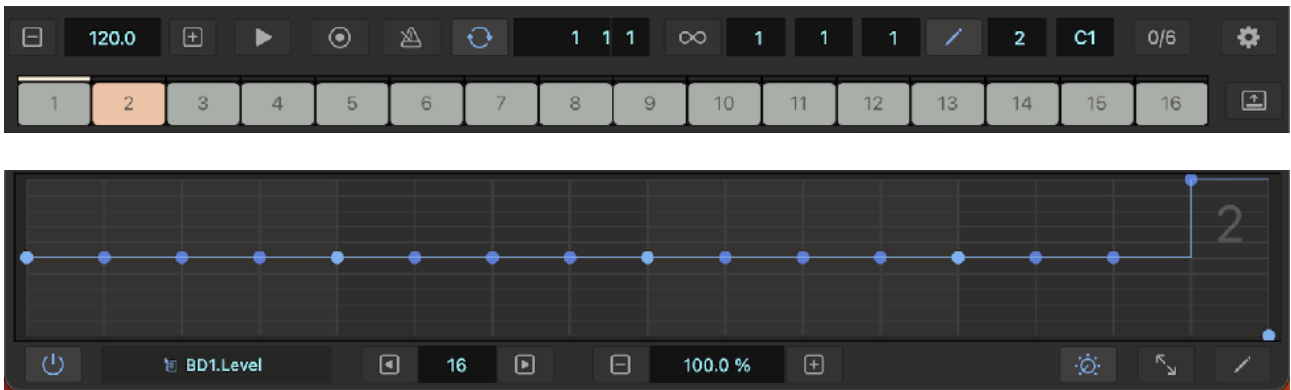
## Convert to linear ramp

### 1. Set start value



Tap edit button in transport bar to open bar selector. Select a starting bar for the ramp. Adjust start value of the ramp in automation editor.

### 2. Set end value



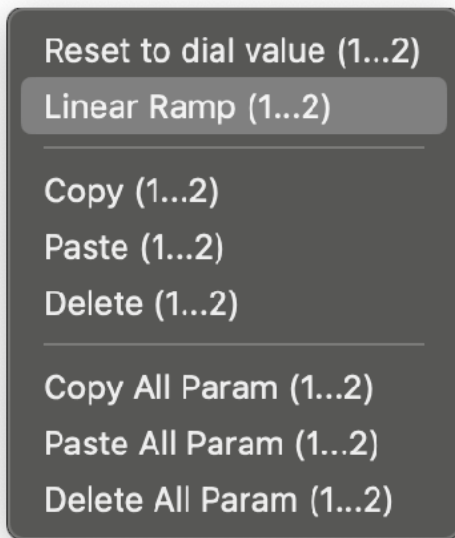
Tap edit button in transport bar to open bar selector. Select an ending bar for the ramp. Adjust end value of the ramp in automation editor.

### 3. Select range (bars)

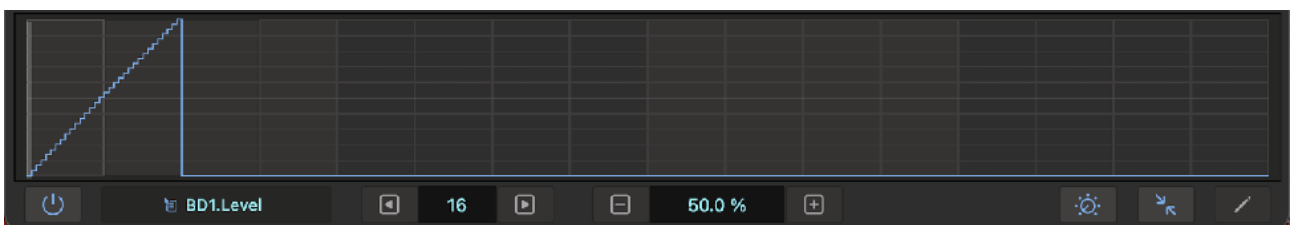
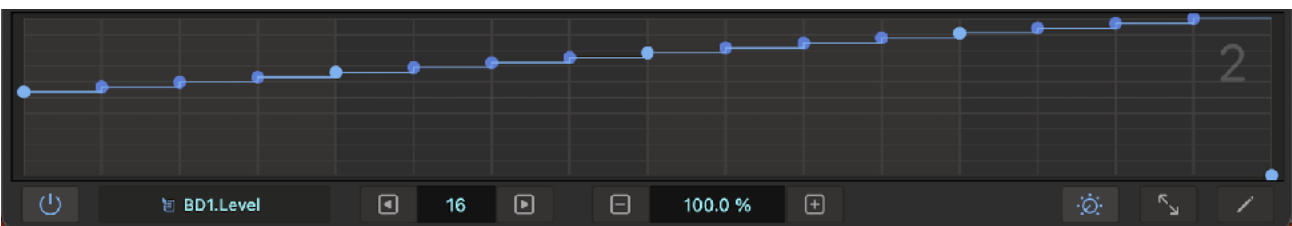
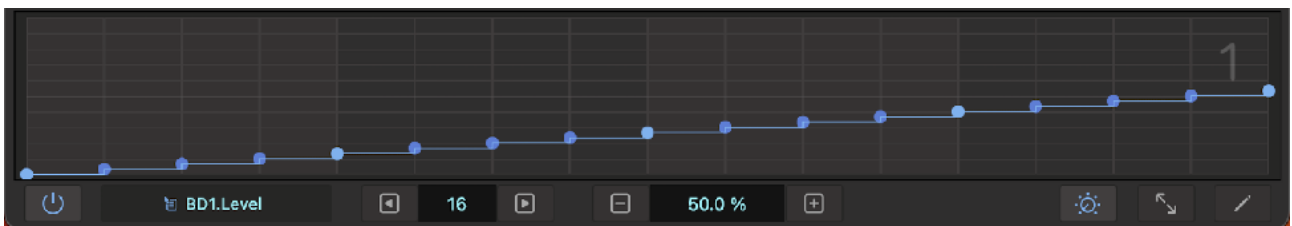


Tap edit button to open bar selector. Select range for editing.

4. Select “Linear Ramp”



Tap edit button in automation editor to open edit menu. Select “Linear Ramp” from the menu. Numbers in Parentheses indicates the specified range. (start ... end)



---

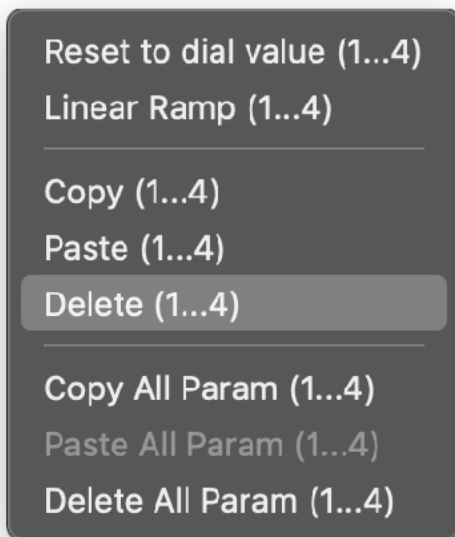
## Delete data for the selected parameter

1. Select range (bars)



Tap edit button to open bar selector. Select range to delete.

2. Select “Delete”



Tap edit button in automation editor to open edit menu. Select “Delete This Parameter” from the menu. Numbers in Parentheses indicates the specified range. (start ... end)

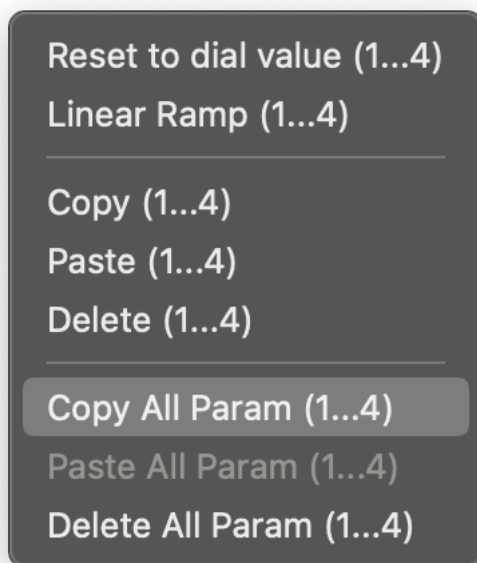
## Copy All Parameters

### 1. Select Range (bars)



Tap edit button to open bar selector. Select range to copy.

### 2. Select Copy



Tap edit button in automation editor to open edit menu. Select “Copy All” from the menu. Numbers in Parentheses indicates the specified range. (start ... end)

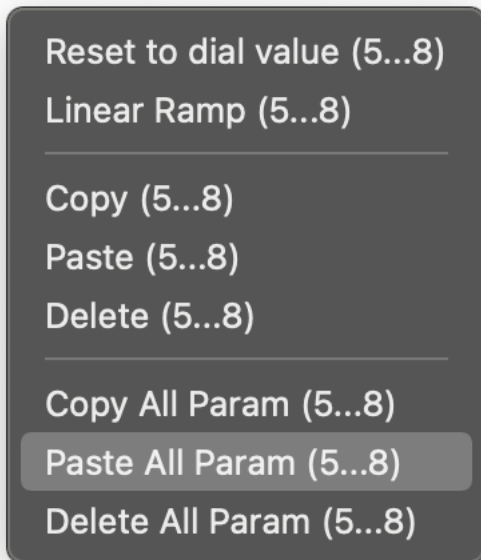
## Paste All Parameters

### 1. Select Range (bars)



Tap edit button to open bar selector. Select range to paste.

### 2. Select Paste



Tap edit button in automation editor to open edit menu. Select "Paste All" from the menu. Numbers in Parentheses indicates the specified range. (start ... end)

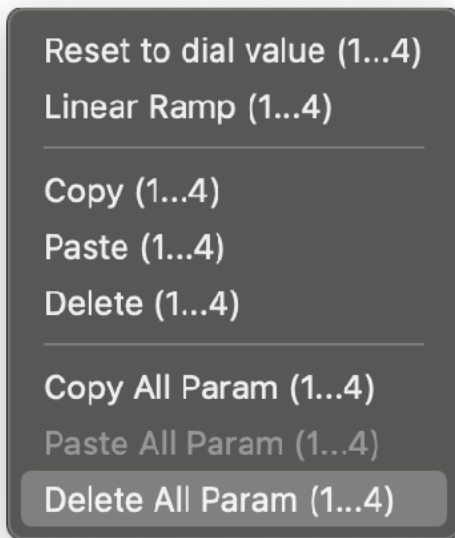
## Delete All Parameters

1. Select range (bars)



Tap edit button to open bar selector. Select range to delete.

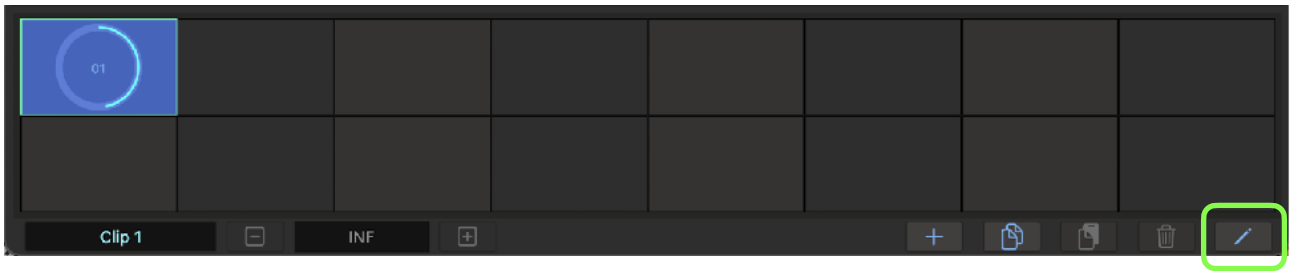
2. Select “Delete All”



Tap edit button in automation editor to open edit menu. Select “Delete All Parameters” from the menu. Numbers in Parentheses indicates the specified range. (start ... end)

# Clips

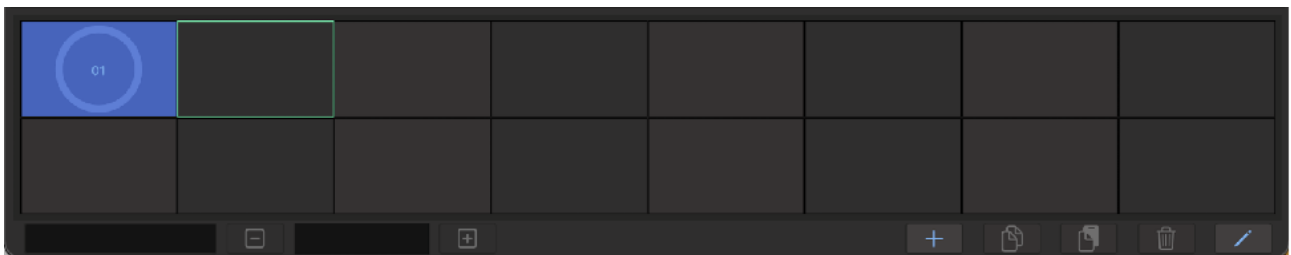
## Edit Clips



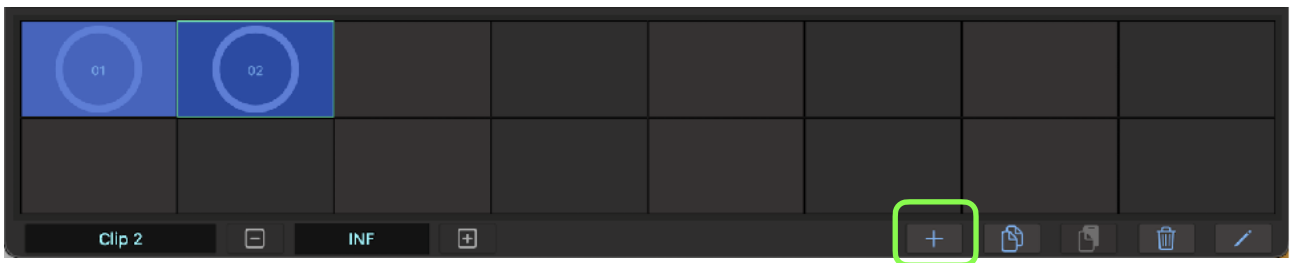
Tap edit button in clip editor to show edit tool buttons.

---

## Add



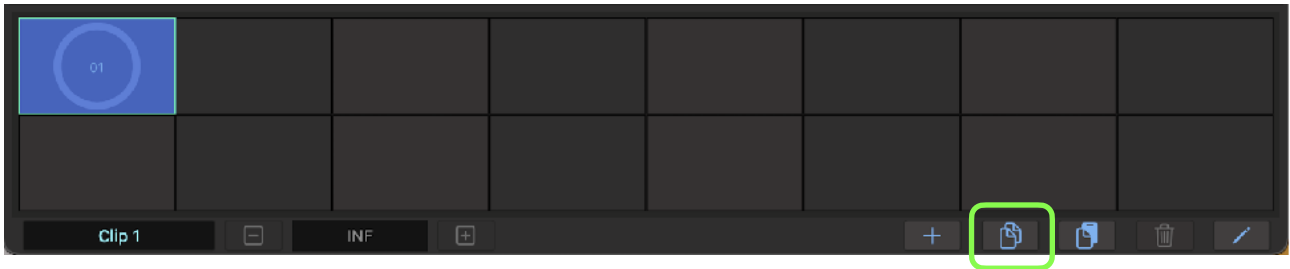
Select a grid to add a new clip.



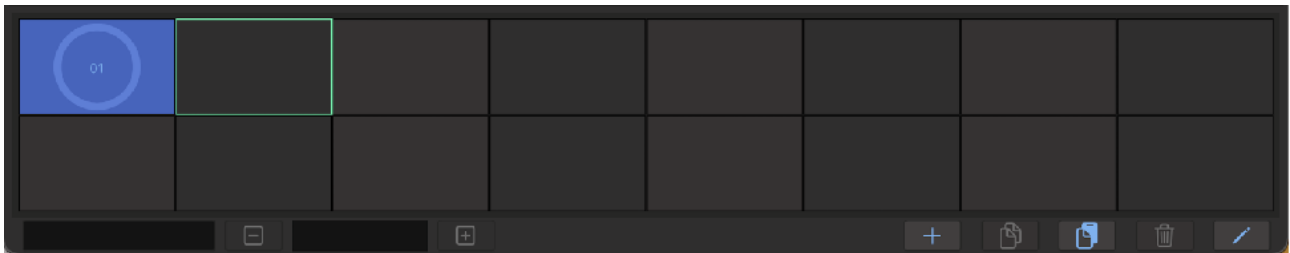
Tap plus button to add a new clip.



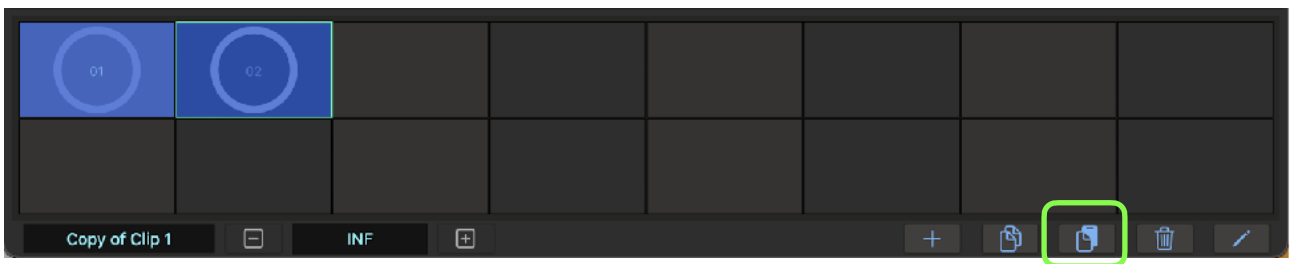
## Copy and Paste



Select a clip to copy and tap copy button.

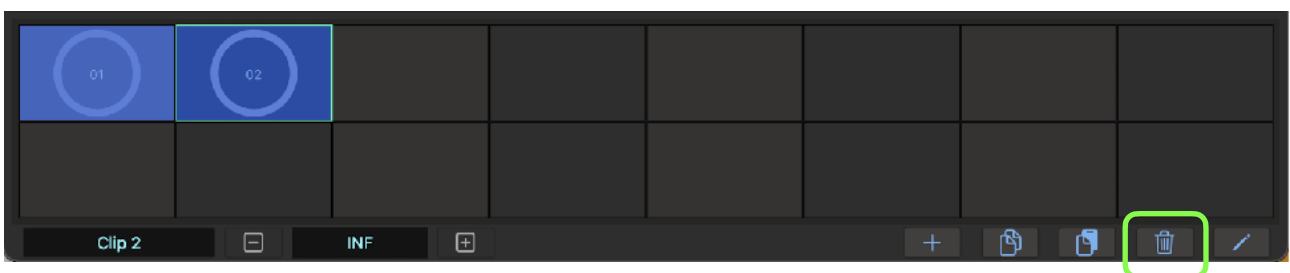


Select a grid to paste the clip.

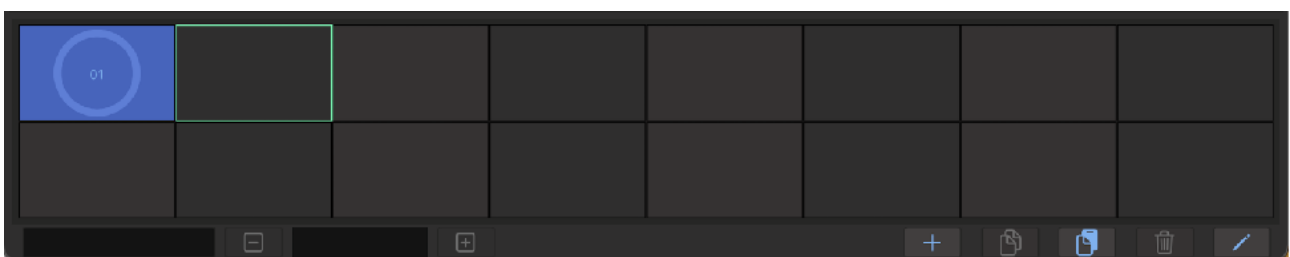


Tap paste button to paste the clip.

## Delete



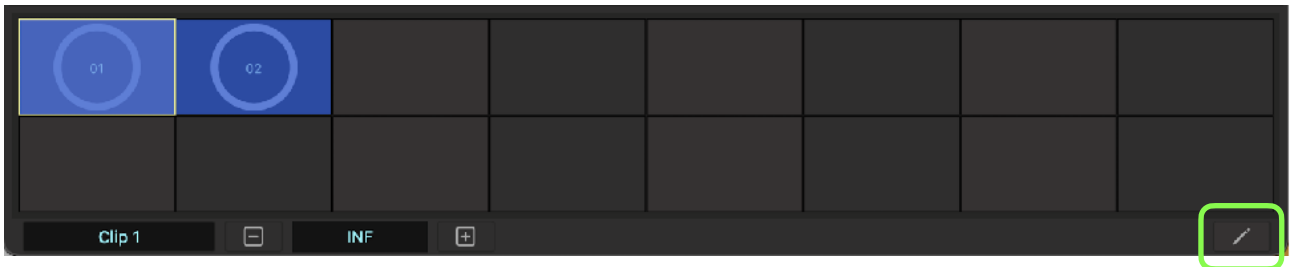
Select a clip to delete.



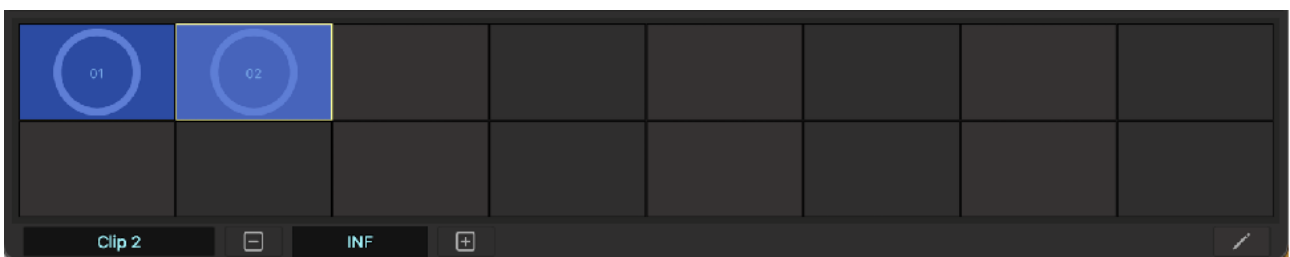
Tap delete button to delete the clip.

# Launch Clips

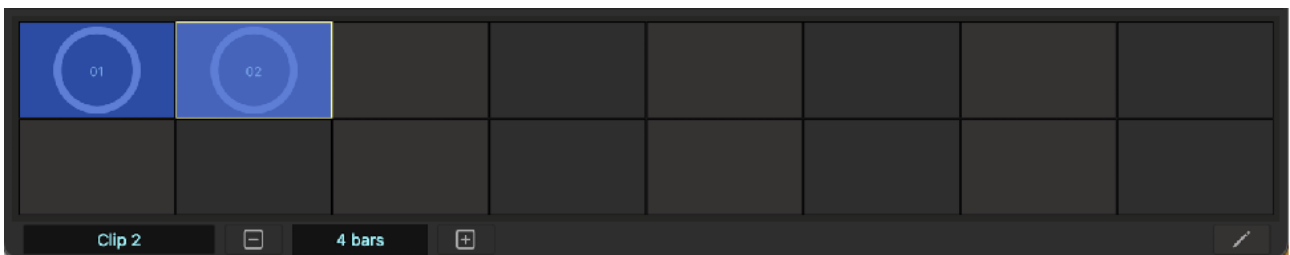
## Clip Editor



Turn off edit button to enable launch mode. Yellow border color indicates a loaded clip.



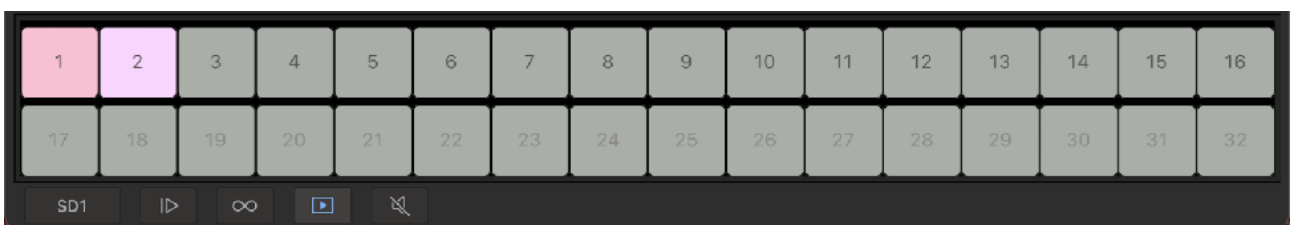
Select a clip to launch.



Adjust length of the clip by using a plus button and a minus button.

## Keypad

Tap clip mode button in Keypad. Select a pad to launch the clip.



# Play and Record

## Play Sequence

---

### 1. Set host sync

Tap sync button in transport bar to enable / disable sync mode.

When sync mode is enabled,

#### Stand Alone

Sequencer is synced to the clock provided by container application. The container application can use Ableton Link to synchronized with the Link enabled devices. Use buttons in transport bar to play / stop sequence and change tempo.

#### Plugin

Sequencer is synced to the clock provided by the host application. Use transport switches of the host application to play / stop the sequence and change tempo.

When sync mode is disabled,

Sequencer is driven by internal clock. Use buttons in transport bar to play / stop the sequence and change tempo.

---

### 2. Set tempo

Tap plus / minus button at the tempo section in the transport bar to open tempo slider. Tempo can be adjusted by the plus / minus buttons and the tempo slider. Tempo slider can adjust tempo by range of plus/minus 20 BPM. Double tap on the slider set center position to the current tempo value. Alternatively tapping on tempo indicator allows you to type in tempo value by computer keyboard.

---

### 3. Set loop

Tap loop button in transport bar to open loop selector. Set loop length by using 16 pads.

---

### 4. Set swing

Tap swing button in transport bar to show swing menu. Select an option from the menu to apply the swing.

Swing Type	Delay time	Duration (Ratio)	Note
Swing 0/6	0 (no swing)	50%	Straight
Swing 1/6	1/6 of 16th note	54%	Soft swing
Swing 2/6	2/6 of 16th note	58%	Soft swing
Swing 3/6	3/6 of 16th note	62%	Soft swing
Swing 4/6	4/6 of 16th note	66%	Triplet swing
Swing 5/6	5/6 of 16th note	70%	Hard swing
Swing 6/6	16th note	75%	Dotted hard swing

Delay time is an amount of delay applied to the third 16th note when a beat is divided by four 16th notes.

Duration (ratio) is a ratio of duration from the first 16th note to the third 16th note when a beat is divided by four 16th notes.

Amount of delay for the notes in a beat changes proportionally.

---

## 5. Set metronome switch

Tap metronome button in transport bar to enable / disable metronome.

---

## 6. Play

Tap play / stop button in transport bar or transport switches of the host application to play / stop the sequence.

# Record Sequence

---

## 1. Set recording mode

Tap record button in transport bar to enable recording mode.

---

## 2. Play sequence

Play the sequence by following the steps described above. Recording will start after count-in. When tap recording button while playing, recording start without count-in. To start recording without count-in, play sequence first then tap record button.

---

## 3. Record notes

Play keypads or MIDI keyboard to record notes. Notes are automatically quantized as 16th notes.

---

## 4. Record parameters automation

Before recording parameter values, use edit command "Reset to Dial Value" to reset values of the parameter to the rest position.

Turn a dial or switch of the voice which is producing sound to record the parameter values. The color of the control changes to green to indicate the parameter is recorded. The control won't move automatically until disabling the recording mode in order to move the control freely during the recording.

If the voice of the parameter is not producing sound, parameter value will not be recorded.

---

## 5. Stop recording

Tap record button in transport bar to disable recording mode.

## Export Audio

### Prepare for exporting audio

---

#### 1. Stop playback

Make sure the playback is stopped.

---

#### 2. Select the first clip to play

Open clip editor and select a clip which should be played at first.

---

#### 3. Turn of metronome

Make sure that metronome is turned off.

---

### Adjust export settings

---

#### 1. Save As

Type in file name if necessary.

---

#### 2. Length

Set total length of the recordings by number of bars. This length should include the length of the delay or reverb tail.

---

#### 3. Location

Select location to save the file. Options are local and iCloud.

---

#### 4. File Type

Select a file type. Options for linear PCM format are AIFF, WAV or CAF. For compressed audio file, choose AAC. If the exported audio file is going to be edited in a different application, it is recommended to choose linear PCM format.

---

#### 5. Sample Rate

Select sample rate. Options are 44.1KHz, 48KHz, 88.2KHz and 96KHz.

---

#### 6. Bit Depth

Select bit depth. Options are 16 bit, 24 bit and 32 bit. Higher number results in better quality. If the exported file is going to be used in a different application, make sure that the which bit depth of the selected file type is supported by the application. (\* 32 bit may not be supported in some applications).

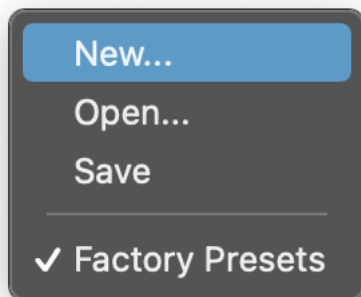
---

### Export Audio

Tap export button to generate audio file and save the file in the specified location. When exporting the file is completed, browser can be open to audition the exported file.

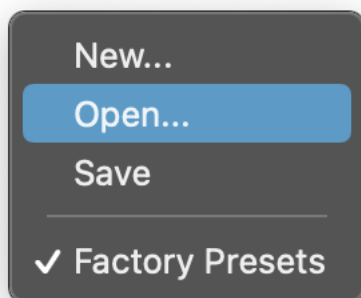
## File Menu

### New...



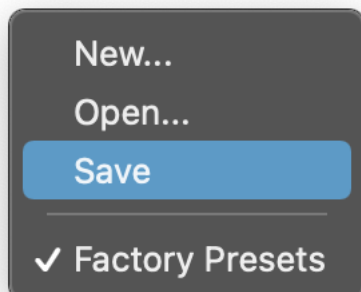
Select “New...” from file menu.  
Reset all parameters and sequence data.

### Load a preset from iCloud



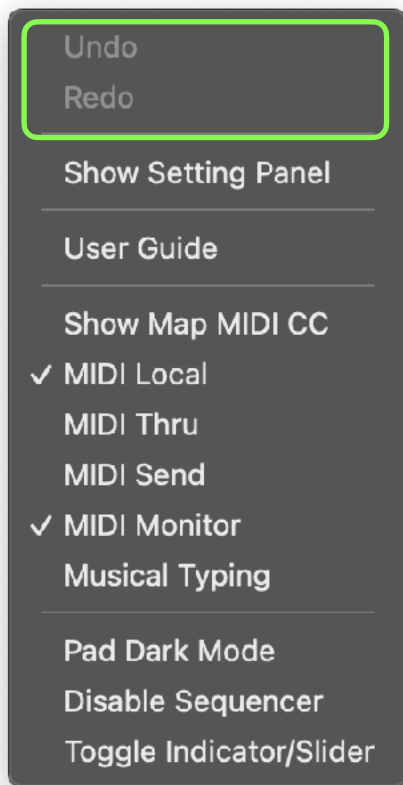
1. Select “Open...” from file menu.
2. Select a file in the file browser.
3. Tap Open to open the preset.

### Save a preset in iCloud



1. Select “Save” from file menu
2. Type in file name
3. Tap OK to save the preset in iCloud Drive.

## Undo / Redo

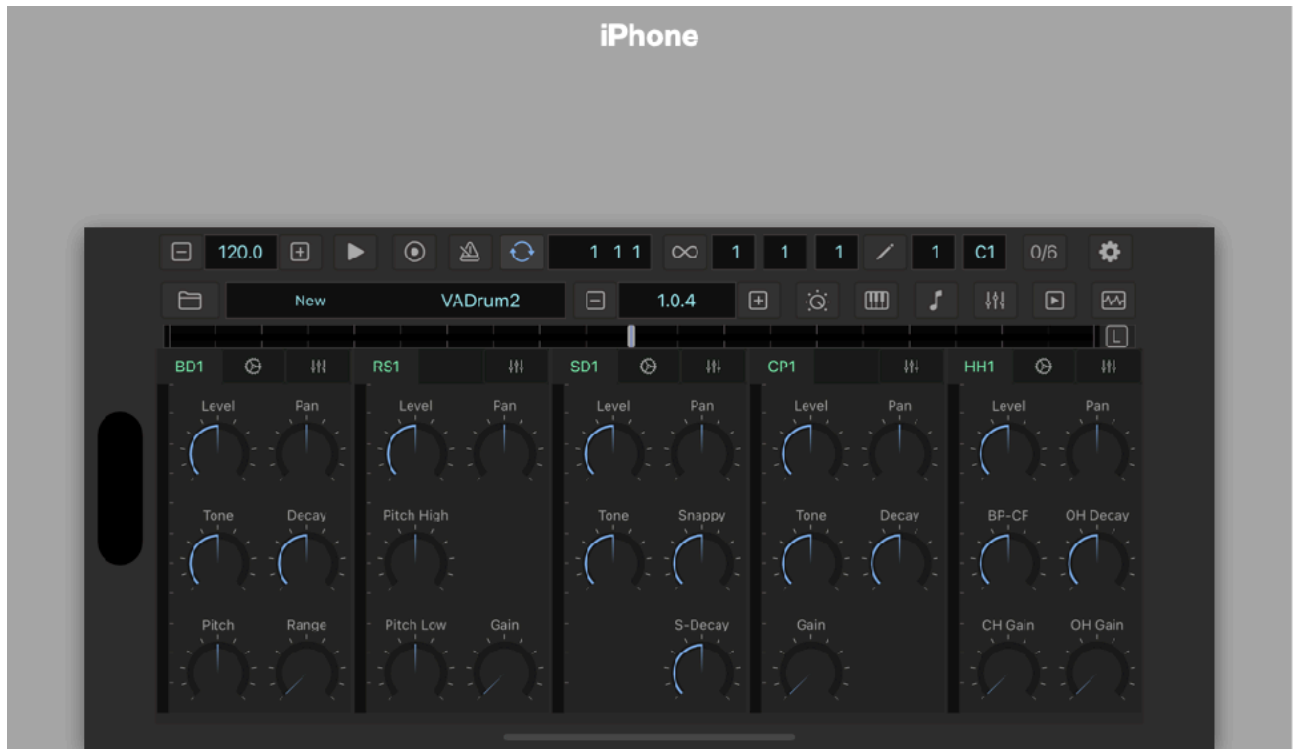


1. Tap “Setting” button to open menu.
  2. Select Undo / Redo from the menu.
- Select Undo to undo previous operation.
  - Select Redo to redo previous undo operation.
- \* Some operation such as play, stop or record are excluded from undo / redo operation.

\* Known Limitation For macOS (Mac Catalyst)

Edit menu in the Main Menu bar do not show action label for Undo or Redo.

# User Interface

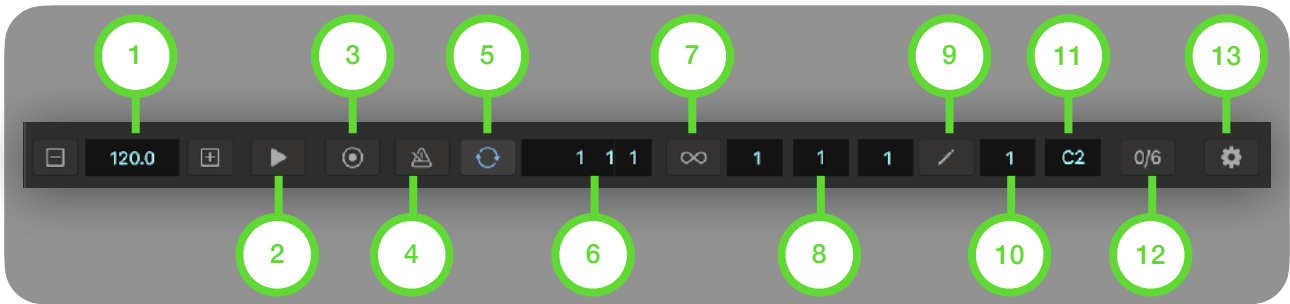




# macOS



# Transport Bar



## 1. Tempo (BPM)

Adjust BPM (Beat Per Minutes)

## 2. Play / Stop

Tap this button to play / stop the sequencer.

## 3. Record

Tap this button to enable / disable recording mode.

## 4. Metronome

Tap this button to play / stop metronome.

## 5. Sync

Tap this button to enable / disable host sync. When host sync is enabled, tempo and transport is controlled by the host application.

## 6. Beat Counter

Indicates current beat time as a format of bar, beat, and sixteenth.

## 7. Loop

Tap this button to open Loop Selector.

## 8. Loop Indicator

Indicate loop start, bar position and loop end.

## 9. Edit

Tap this button to open bar selector.

## 10. Editing Bar Indicator

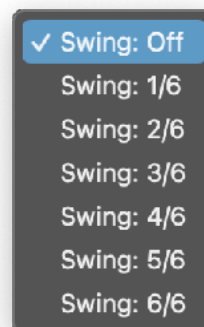
Indicate editing bar.

## 11. Clip Indicator

Indicate a loaded clip.

## 12. Swing

Tap this button to show Swing menu.



## Tempo Slider

Use this slider to adjust tempo. Adjustable range is +/- 20 BPM. Double tap on the slider will reset center position to the current tempo value.



## Loop Selector

Use this selector to select range of the loop.

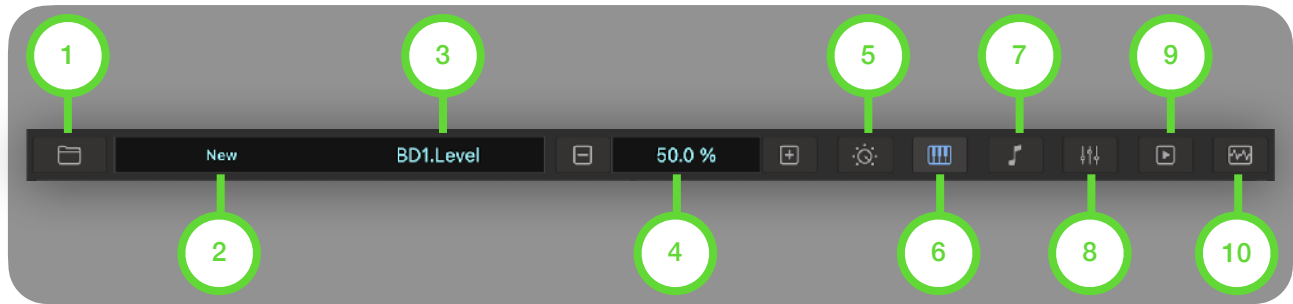


## Bar Selector

Use this selector to select bar(s) for editing.



## Tool Bar



---

### 1. File

Tap this button to show file menu.

---

### 2. Preset Name

Indicates name of the selected preset. Tap this button to show preset list.

---

### 3. Parameter Name

Indicates name of the selected parameter.

---

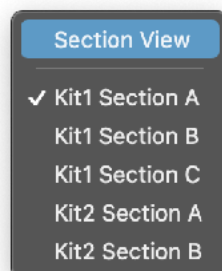
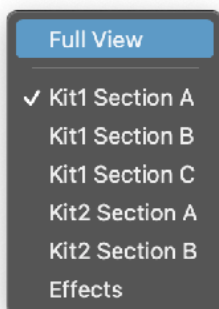
### 4. Parameter Value

Indicates value of the selected parameter. Use plus and minus button to adjust the value.

---

### 5. Synth

Tap this button to show Synth Section Menu.



---

### 6. Keypad

Tap this button to show keypad.

---

### 7. Piano Roll

Tap this button to show piano roll editor

---

### 8. Automation

Tap this button to show automation editor.

---

### 9. Clip

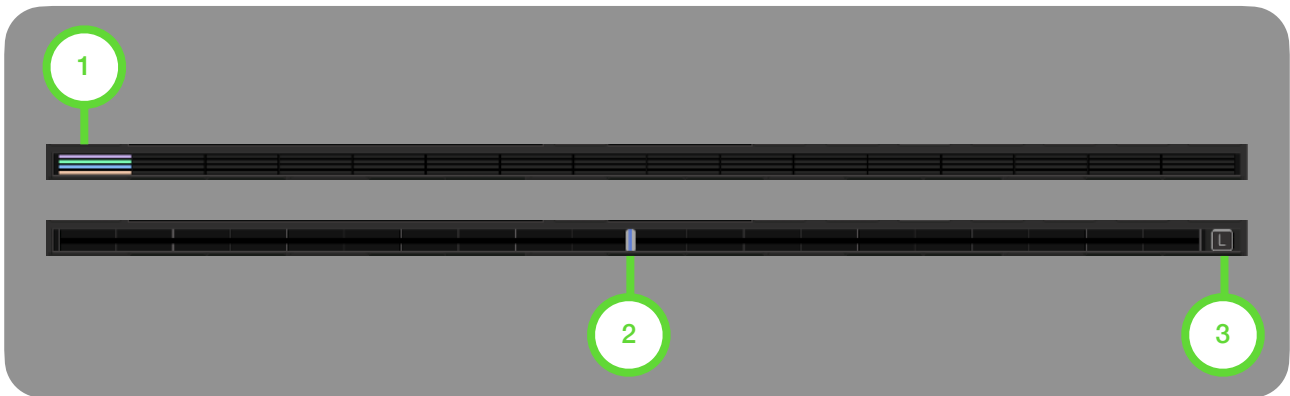
Tap this button to show clip editor.

---

### 10. Scope

Tap this button to show oscilloscope.

## Position Indicator / Master Slider



### 1. Position Indicator

Indicate position of clip, bar and step in sequencer and selected steps for editing.

### 2. Master Slider

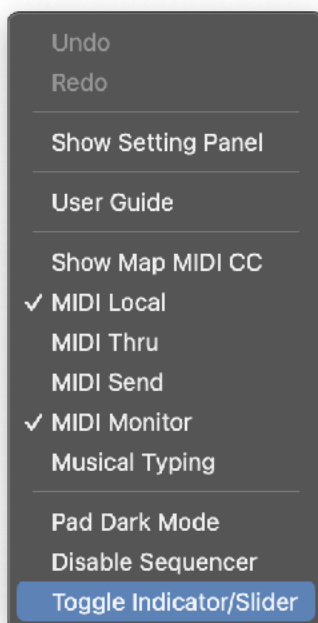
Adjust value of the selected parameter.

### 3. Lock Button

Tap the button to lock the selected parameter to the slider. Tap the button again to unlock.

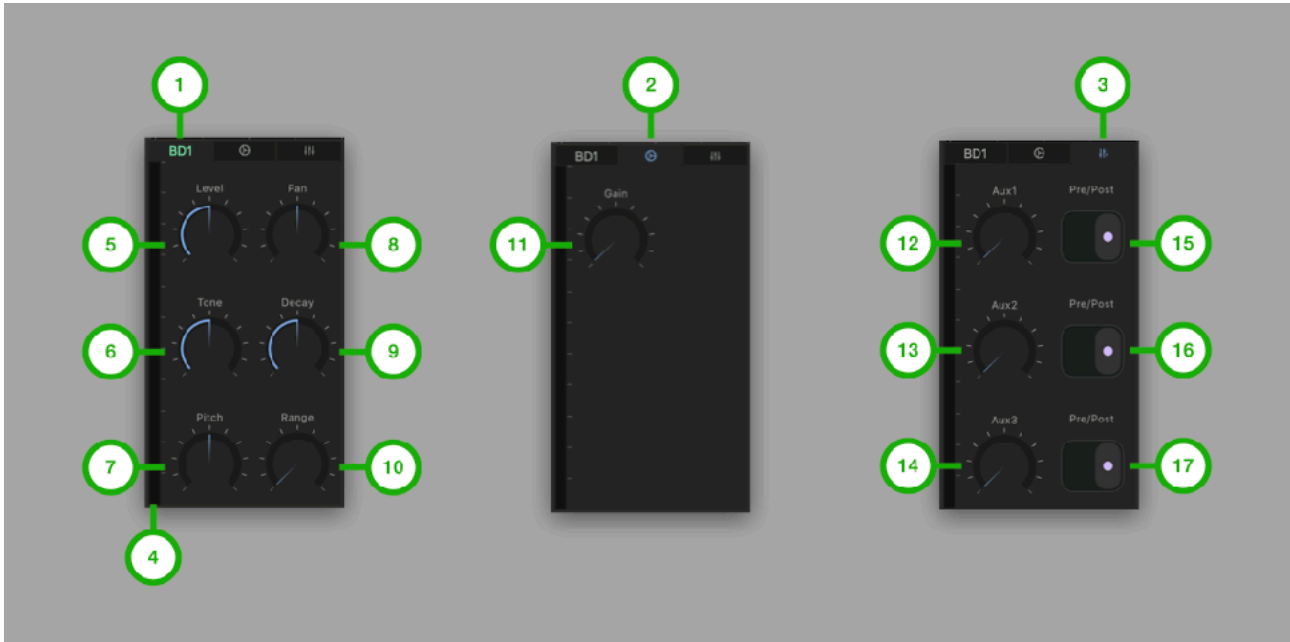
## Toggle Indicator / Slider (iPhone)

- Double tap on the view to toggle between indicator and slider.
- Select “Toggle Indicator/Slider” from the setting menu.



# Drum Synth and Effects

## BD1 (Bass Drum 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Tone

Adjust tone

### 7. Pitch

Adjust pitch

### 8. Pan

Adjust pan

### 9. Decay

Adjust decay

### 10. Range

Adjust decay range

### 11. Gain

Adjust gain

### 12. Aux1 Send Level

Adjust aux1 (delay) send level

### 13. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 14. Aux3 Send Level

Adjust aux3 (reverb) send level

### 15. Aux1 Pre / Post

Select source signal to send aux1

### 16. Aux2 Pre / Post

Select source signal to send aux2

### 17. Aux3 Pre / Post

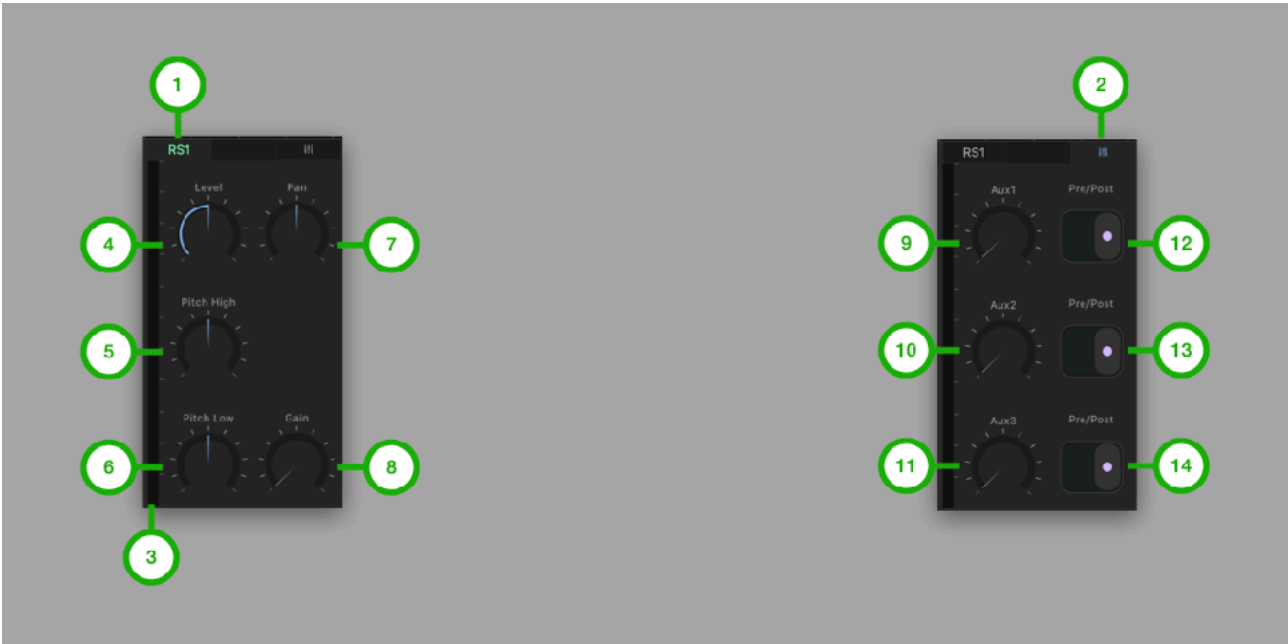
Select source signal to send aux3

#### \* Pre / Post

“Pre” means pre fader. Signal is taken before volume level is applied to the signal.

“Post” means post fader. Signal is taken after volume level is applied to the signal.

## RS1 (Rim Shot 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Aux Tab

Tap to select Aux Tab

### 3. Level Meter

Indicate output level

### 4. Level

Adjust level

### 5. Pitch High

Adjust pitch of the high oscillator.

### 6. Pitch Low

Adjust pitch of the low oscillator.

### 7. Pan

Adjust pan

### 8. Gain

Adjust gain

### 9. Aux1 Send Level

Adjust aux1 (delay) send level

### 10. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 11. Aux3 Send Level

Adjust aux3 (reverb) send level

### 12. Aux1 Pre / Post

Select source signal to send aux1

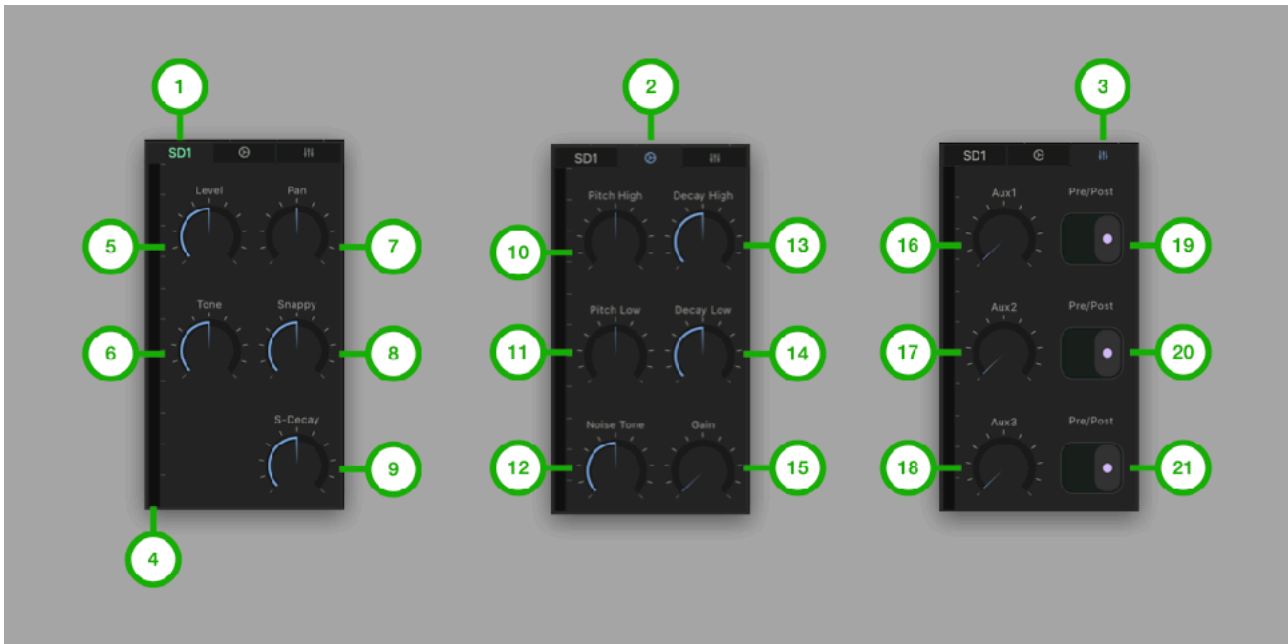
### 13. Aux2 Pre / Post

Select source signal to send aux2

### 14. Aux3 Pre / Post

Select source signal to send aux3

## SD1 (Snare Drum 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Tone

Adjust tone

### 7. Pan

Adjust pan

### 8. Snappy

Adjust level of metallic sound

### 9. S-Decay

Adjust decay of the metallic sound

### 10. Pitch High

Adjust pitch of the high oscillator

### 11. Pitch Low

Adjust pitch of the low oscillator

### 12. Noise Tone

Adjust lowpass frequency of noise filter

### 13. Decay High

Adjust decay of the high oscillator

### 14. Decay Low

Adjust decay of the low oscillator

### 15. Gain

Adjust gain

### 16. Aux1 Send Level

Adjust aux1 (delay) send level

### 17. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 18. Aux3 Send Level

Adjust aux3 (reverb) send level

### 19. Aux1 Pre / Post

Select source signal to send aux1

### 20. Aux2 Pre / Post

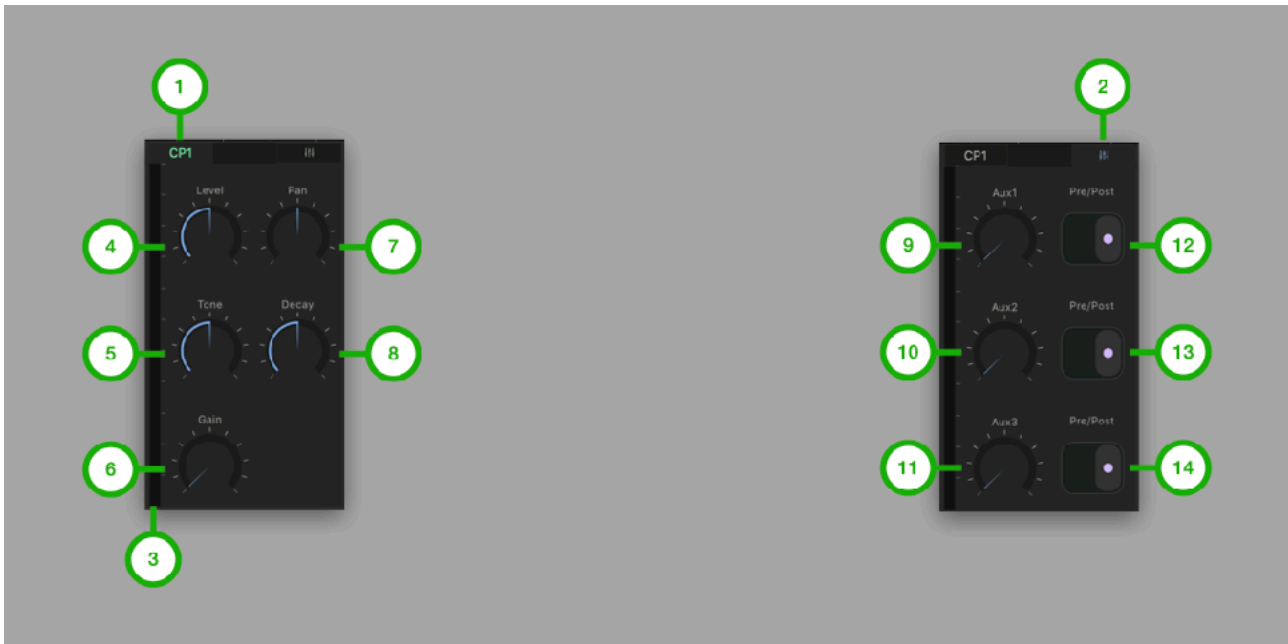
Select source signal to send aux2

### 21. Aux3 Pre / Post

Select source signal to send aux3



## CP1 (Hand Clap 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Aux Tab

Tap to select Aux Tab

### 3. Level Meter

Indicate output level

### 4. Level

Adjust level

### 5. Tone

Adjust tone

### 6. Gain

Adjust gain

### 7. Pan

Adjust pan

### 8. Decay

Adjust decay

### 9. Aux1 Send Level

Adjust aux1 (delay) send level

### 10. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 11. Aux3 Send Level

Adjust aux3 (reverb) send level

### 12. Aux1 Pre / Post

Select source signal to send aux1

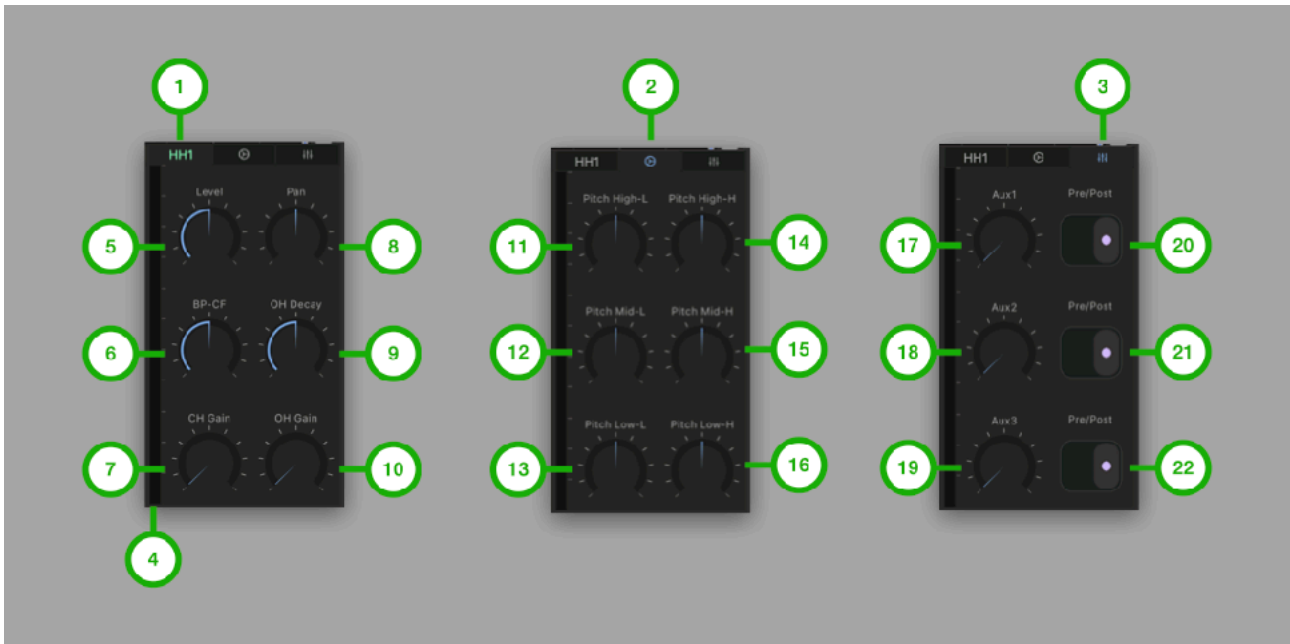
### 13. Aux2 Pre / Post

Select source signal to send aux2

### 14. Aux3 Pre / Post

Select source signal to send aux3

## HH1 (Hi-Hat 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. BP-CF

Adjust frequency of band pass filter

### 7. CH Gain

Adjust gain of close hi-hat

### 8. Pan

Adjust pan

### 9. OH-Decay

Adjust decay of open hi-hat

### 10. OH Gain

Adjust gain of open hi-hat

### 11. Pitch High-L

Adjust pitch of high oscillator

### 12. Pitch Mid-L

Adjust pitch of mid-low oscillator

### 13. Pitch Low-L

Adjust pitch of lowest oscillator

### 14. Pitch High-H

Adjust pitch of highest oscillator

### 15. Pitch Mid-H

Adjust pitch of mid-high oscillator

### 16. Pitch Low-H

Adjust pitch of low oscillator

### 17. Aux1 Send Level

Adjust aux1 (delay) send level

### 18. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 19. Aux3 Send Level

Adjust aux3 (reverb) send level

### 20. Aux1 Pre / Post

Select source signal to send aux1

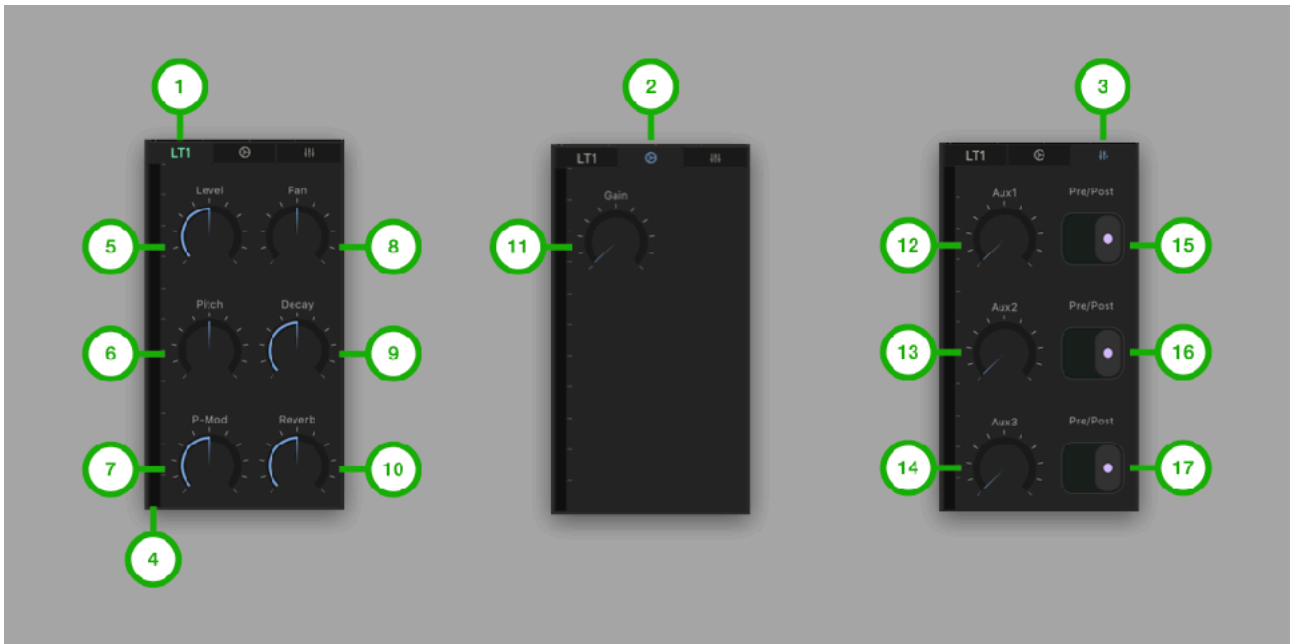
### 21. Aux2 Pre / Post

Select source signal to send aux2

### 22. Aux3 Pre / Post

Select source signal to send aux3

## LT1 (Low Tom 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Pitch

Adjust pitch

### 7. P-Mod

Adjust amount of pitch modulation

### 8. Pan

Adjust pan

### 9. Decay

Adjust decay

### 10. Reverb

Adjust amount of artificial reverberation

### 11. Gain

Adjust gain

### 12. Aux1 Send Level

Adjust aux1 (delay) send level

### 13. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 14. Aux3 Send Level

Adjust aux3 (reverb) send level

### 15. Aux1 Pre / Post

Select source signal to send aux1

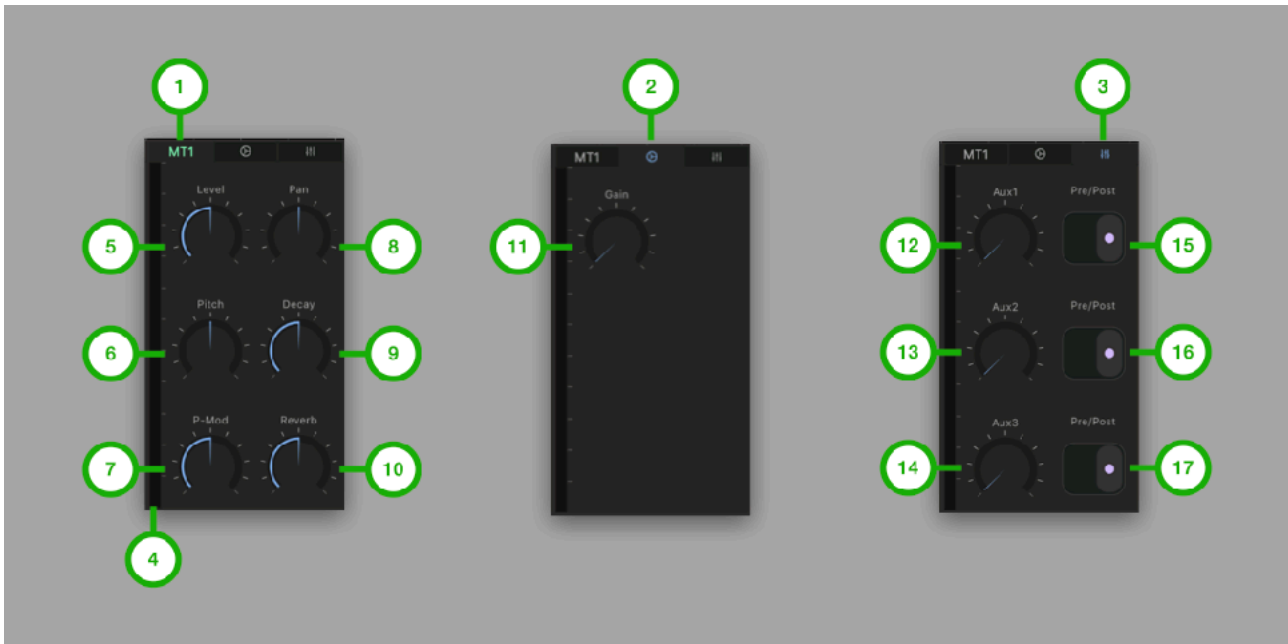
### 16. Aux2 Pre / Post

Select source signal to send aux2

### 17. Aux3 Pre / Post

Select source signal to send aux3

## MT1 (Mid Tom 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Pitch

Adjust pitch

### 7. P-Mod

Adjust amount of pitch modulation

### 8. Pan

Adjust pan

### 9. Decay

Adjust decay

### 10. Reverb

Adjust amount of artificial reverberation

### 11. Gain

Adjust gain

### 12. Aux1 Send Level

Adjust aux1 (delay) send level

### 13. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 14. Aux3 Send Level

Adjust aux3 (reverb) send level

### 15. Aux1 Pre / Post

Select source signal to send aux1

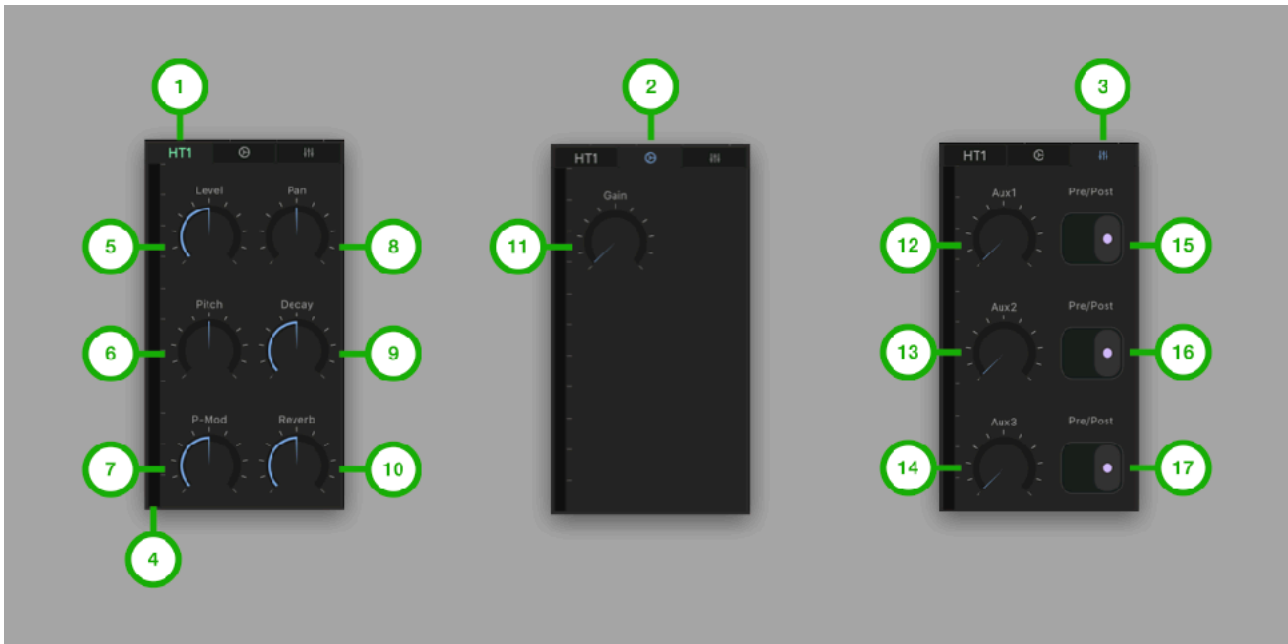
### 16. Aux2 Pre / Post

Select source signal to send aux2

### 17. Aux3 Pre / Post

Select source signal to send aux3

## HT1 (High Tom 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Pitch

Adjust pitch

### 7. P-Mod

Adjust amount of pitch modulation

### 8. Pan

Adjust pan

### 9. Decay

Adjust decay

### 10. Reverb

Adjust amount of artificial reverberation

### 11. Gain

Adjust gain

### 12. Aux1 Send Level

Adjust aux1 (delay) send level

### 13. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 14. Aux3 Send Level

Adjust aux3 (reverb) send level

### 15. Aux1 Pre / Post

Select source signal to send aux1

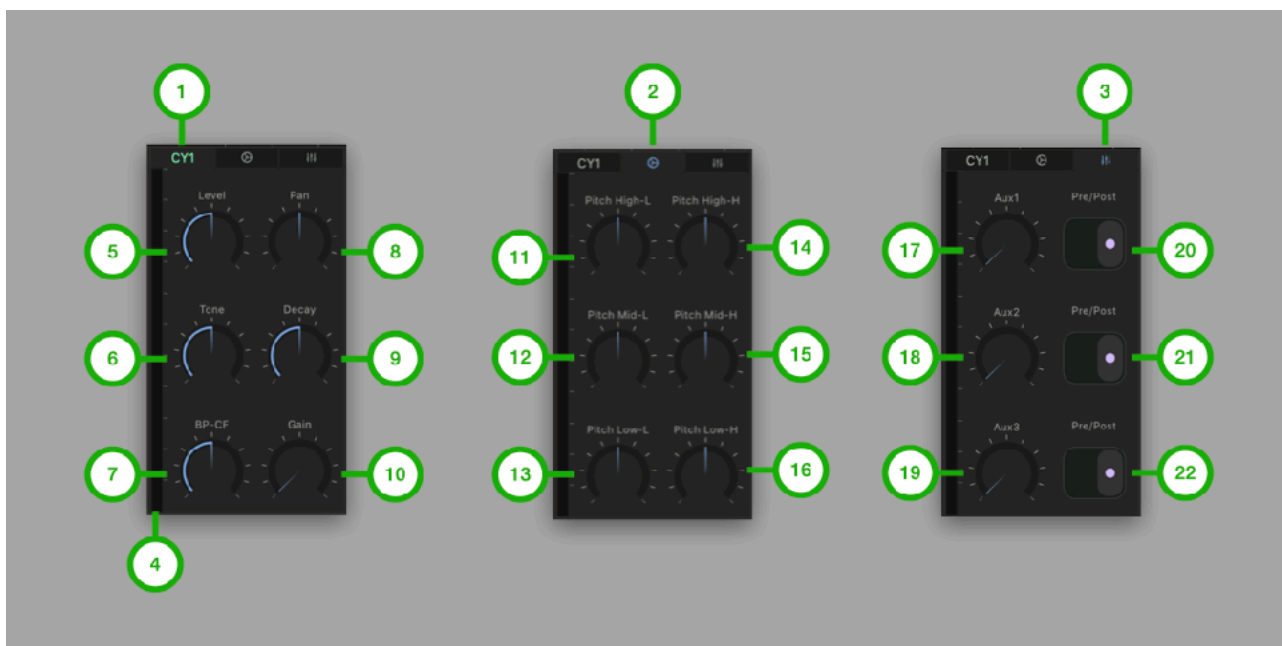
### 16. Aux2 Pre / Post

Select source signal to send aux2

### 17. Aux3 Pre / Post

Select source signal to send aux3

## CY1 (Cymbal 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Tone

Adjust tone

### 7. BF-CF

Adjust frequency of band pass filter

### 8. Pan

Adjust pan

### 9. Decay

Adjust decay

### 10. Gain

Adjust gain

### 11. Pitch High-L

Adjust pitch of high oscillator

### 12. Pitch Mid-L

Adjust pitch of mid-low oscillator

### 13. Pitch Low-L

Adjust pitch of lowest oscillator

### 14. Pitch High-H

Adjust pitch of highest oscillator

### 15. Pitch Mid-H

Adjust pitch of mid-high oscillator

### 16. Pitch Low-H

Adjust pitch of low oscillator

### 17. Aux1 Send Level

Adjust aux1 (delay) send level

### 18. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 19. Aux3 Send Level

Adjust aux3 (reverb) send level

### 20. Aux1 Pre / Post

Select source signal to send aux1

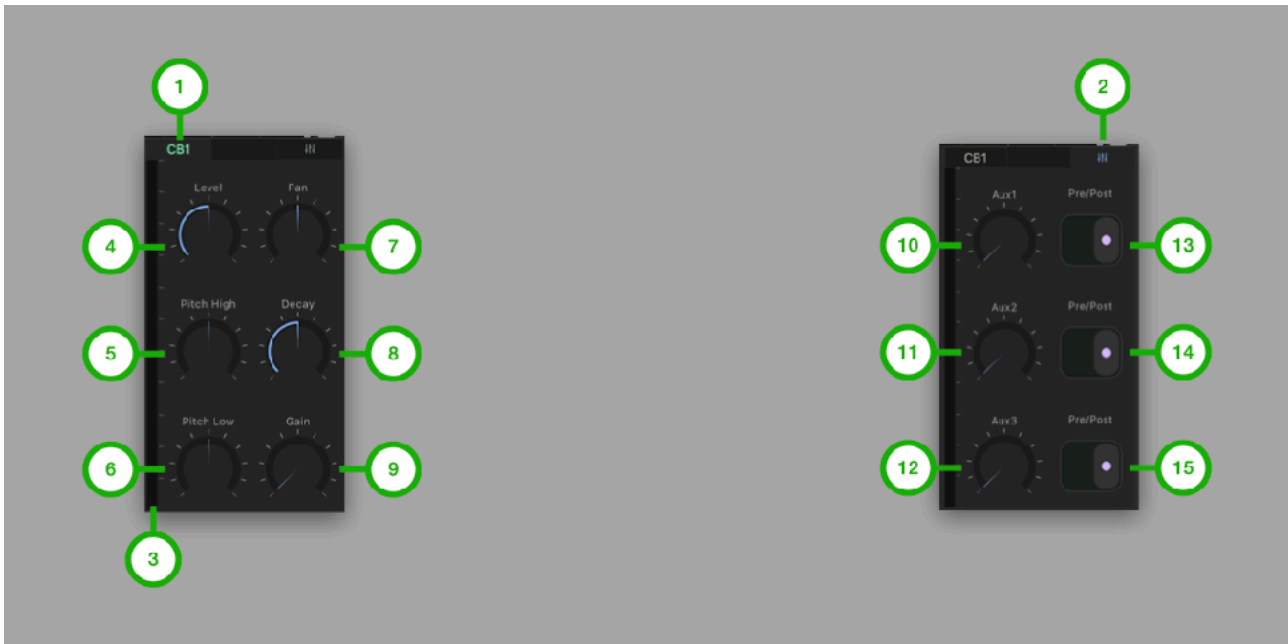
### 21. Aux2 Pre / Post

Select source signal to send aux2

### 22. Aux3 Pre / Post

Select source signal to send aux3

## CB1 (Cow Bell 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Aux Tab

Tap to select Aux Tab

### 3. Level Meter

Indicate output level

### 4. Level

Adjust level

### 5. Pitch High

Adjust pitch of the high oscillator

### 6. Pitch Low

Adjust pitch of the low oscillator

### 7. Pan

Adjust pan

### 8. Decay

Adjust decay

### 9. Gain

Adjust gain

### 10. Aux1 Send Level

Adjust aux1 (delay) send level

### 11. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 12. Aux3 Send Level

Adjust aux3 (reverb) send level

### 13. Aux1 Pre / Post

Select source signal to send aux1

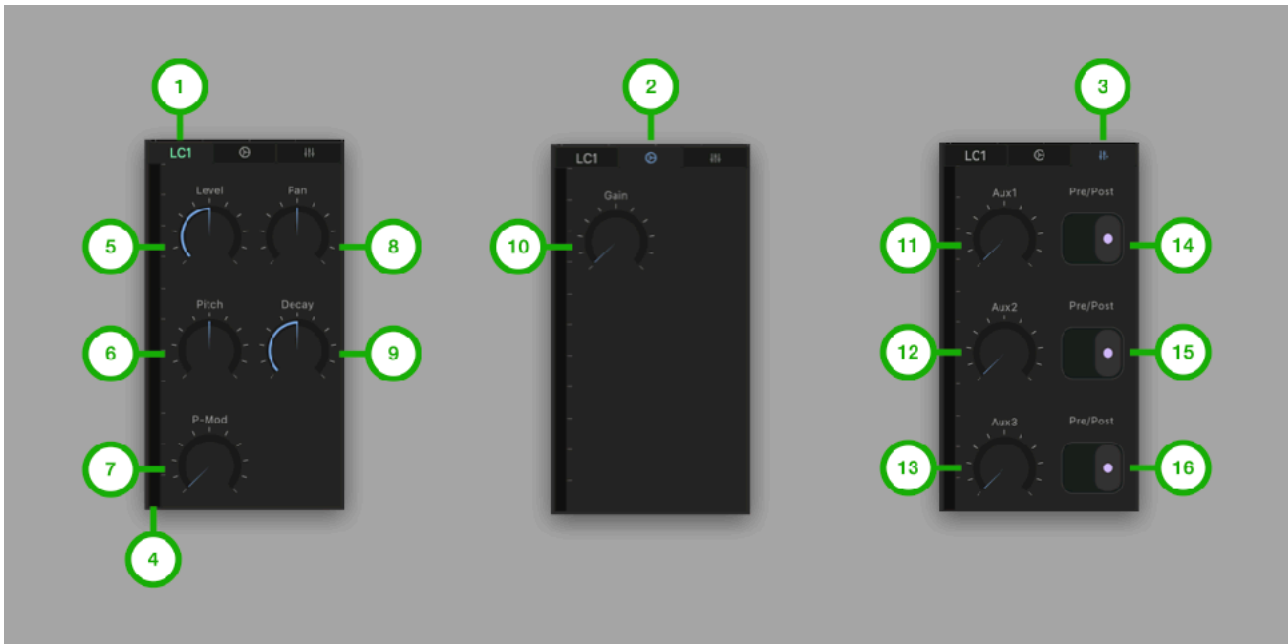
### 14. Aux2 Pre / Post

Select source signal to send aux2

### 15. Aux3 Pre / Post

Select source signal to send aux3

## LC1 (Low Conga 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Pitch

Adjust pitch

### 7. P-Mod

Adjust amount of pitch modulation

### 8. Pan

Adjust pan

### 9. Decay

Adjust decay

### 10. Gain

Adjust gain

### 11. Aux1 Send Level

Adjust aux1 (delay) send level

### 12. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 13. Aux3 Send Level

Adjust aux3 (reverb) send level

### 14. Aux1 Pre / Post

Select source signal to send aux1

### 15. Aux2 Pre / Post

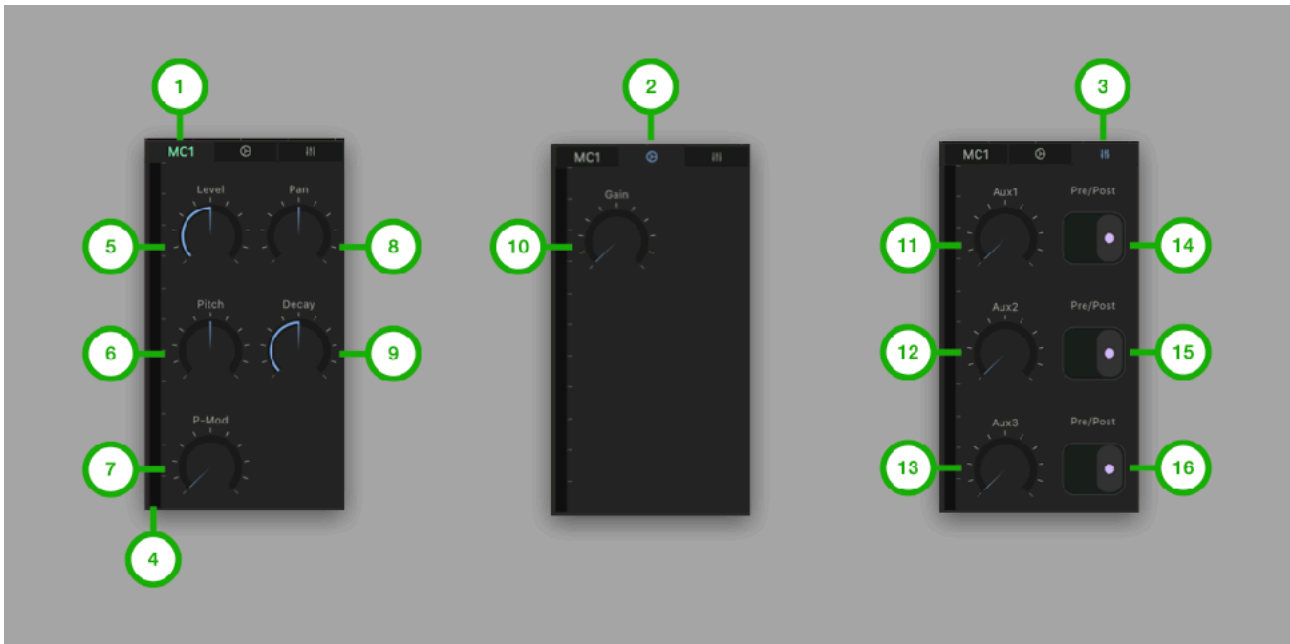
Select source signal to send aux2

### 16. Aux3 Pre / Post

Select source signal to send aux3



## MC1 (Mid Conga 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Pitch

Adjust pitch

### 7. P-Mod

Adjust amount of pitch modulation

### 8. Pan

Adjust pan

### 9. Decay

Adjust decay

### 10. Gain

Adjust gain

### 11. Aux1 Send Level

Adjust aux1 (delay) send level

### 12. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 13. Aux3 Send Level

Adjust aux3 (reverb) send level

### 14. Aux1 Pre / Post

Select source signal to send aux1

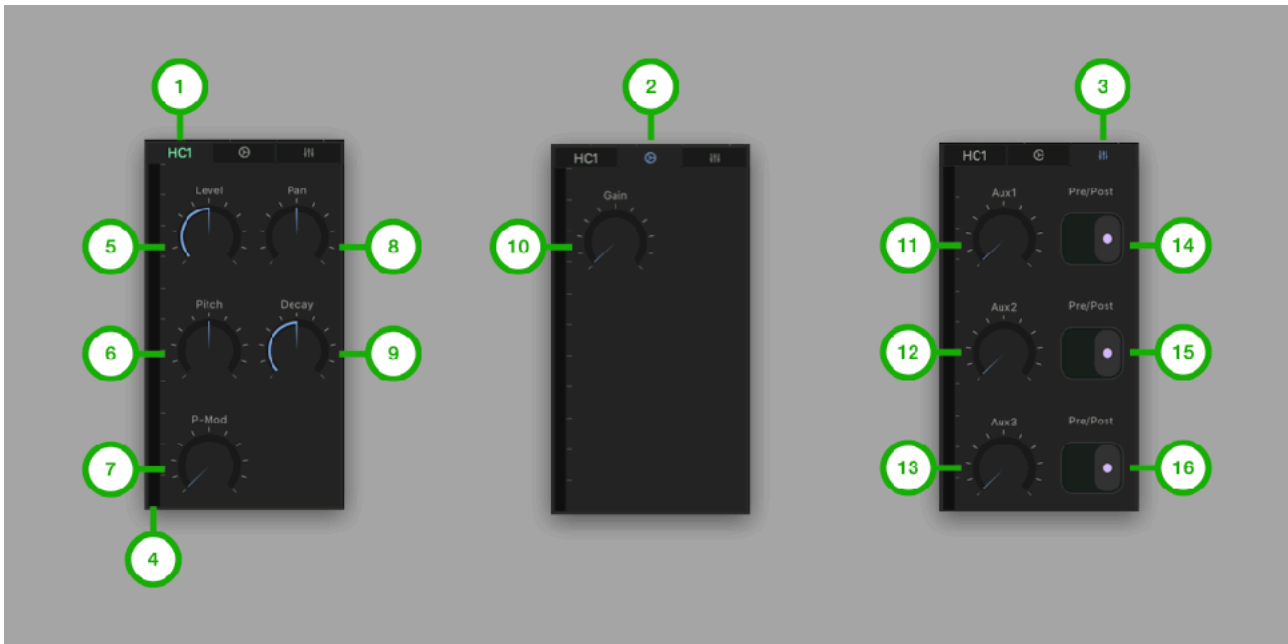
### 15. Aux2 Pre / Post

Select source signal to send aux2

### 16. Aux3 Pre / Post

Select source signal to send aux3

## HC1 (High Conga 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Pitch

Adjust pitch

### 7. P-Mod

Adjust amount of pitch modulation

### 8. Pan

Adjust pan

### 9. Decay

Adjust decay

### 10. Gain

Adjust gain

### 11. Aux1 Send Level

Adjust aux1 (delay) send level

### 12. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 13. Aux3 Send Level

Adjust aux3 (reverb) send level

### 14. Aux1 Pre / Post

Select source signal to send aux1

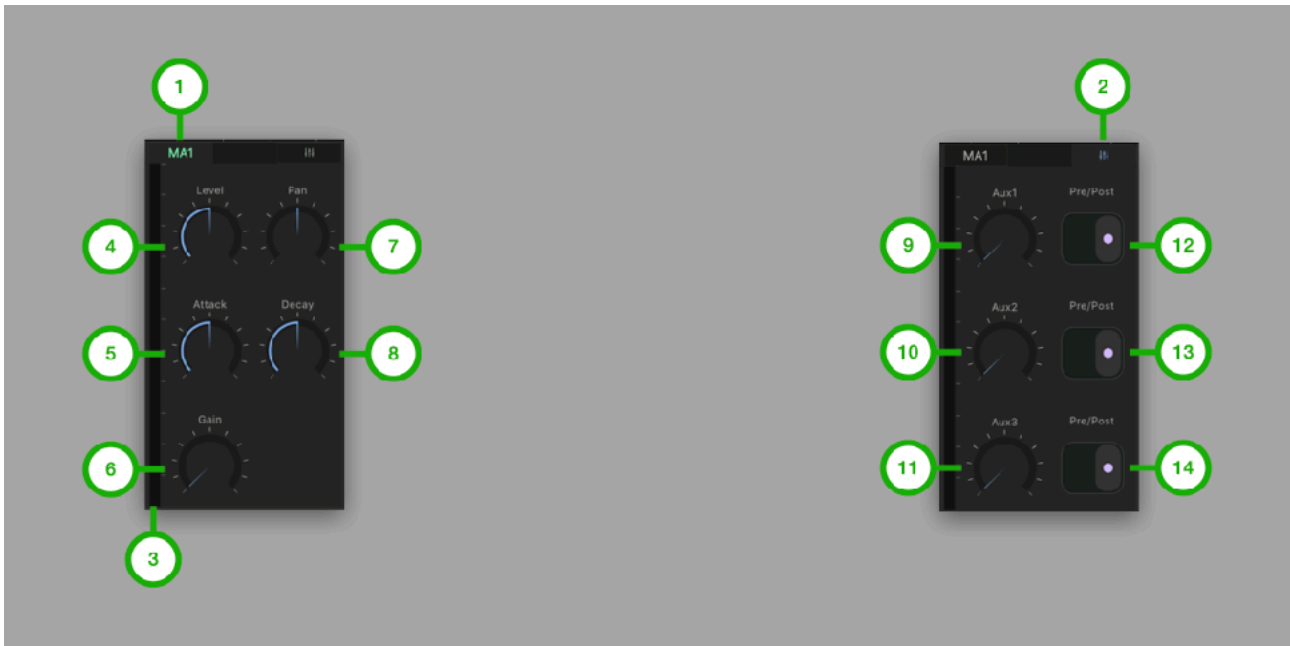
### 15. Aux2 Pre / Post

Select source signal to send aux2

### 16. Aux3 Pre / Post

Select source signal to send aux3

## MA1 (Maracas 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Aux Tab

Tap to select Aux Tab

### 3. Level Meter

Indicate output level

### 4. Level

Adjust level

### 5. Attack

Adjust duration of the attack

### 6. Gain

Adjust gain

### 7. Pan

Adjust pan

### 8. Decay

Adjust decay

### 9. Aux1 Send Level

Adjust aux1 (delay) send level

### 10. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 11. Aux3 Send Level

Adjust aux3 (reverb) send level

### 12. Aux1 Pre / Post

Select source signal to send aux1

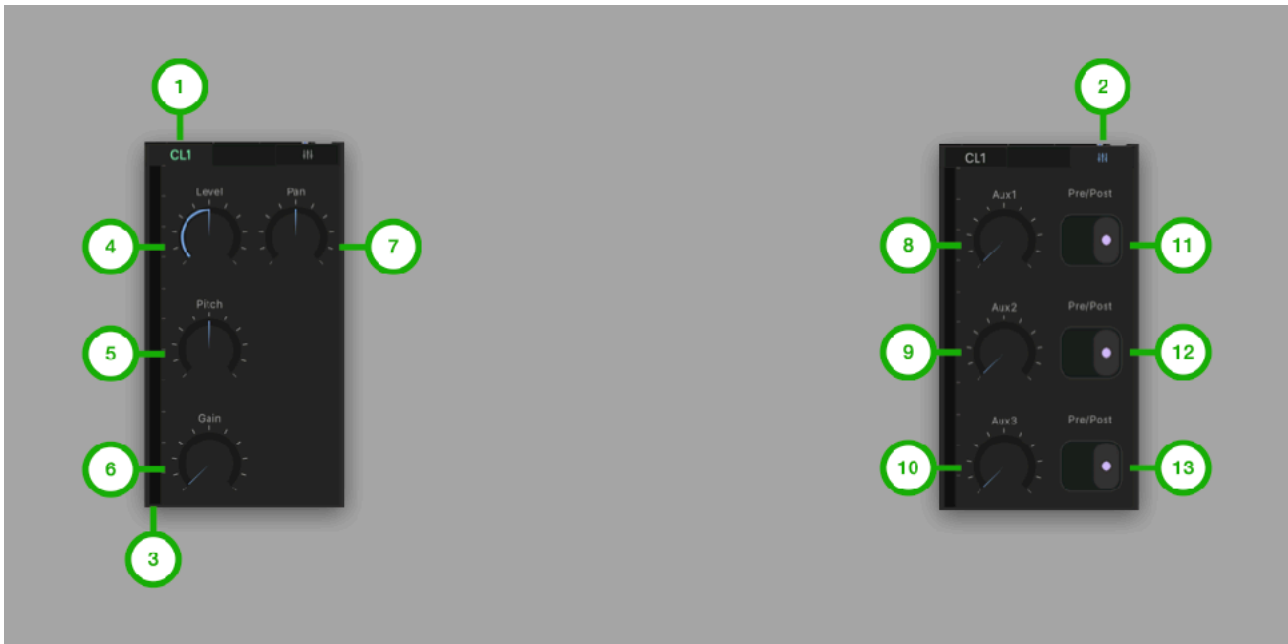
### 13. Aux2 Pre / Post

Select source signal to send aux2

### 14. Aux3 Pre / Post

Select source signal to send aux3

## CL1 (Claves 1)



### 1. Main Tab

Tap to Select Main Tab

### 2. Aux Tab

Tap to select Aux Tab

### 3. Level Meter

Indicate output level

### 4. Level

Adjust level

### 5. Pitch High

Adjust pitch of the oscillator

### 6. Gain

Adjust gain

### 7. Pan

Adjust pan

### 8. Aux1 Send Level

Adjust aux1 (delay) send level

### 9. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 10. Aux3 Send Level

Adjust aux3 (reverb) send level

### 11. Aux1 Pre / Post

Select source signal to send aux1

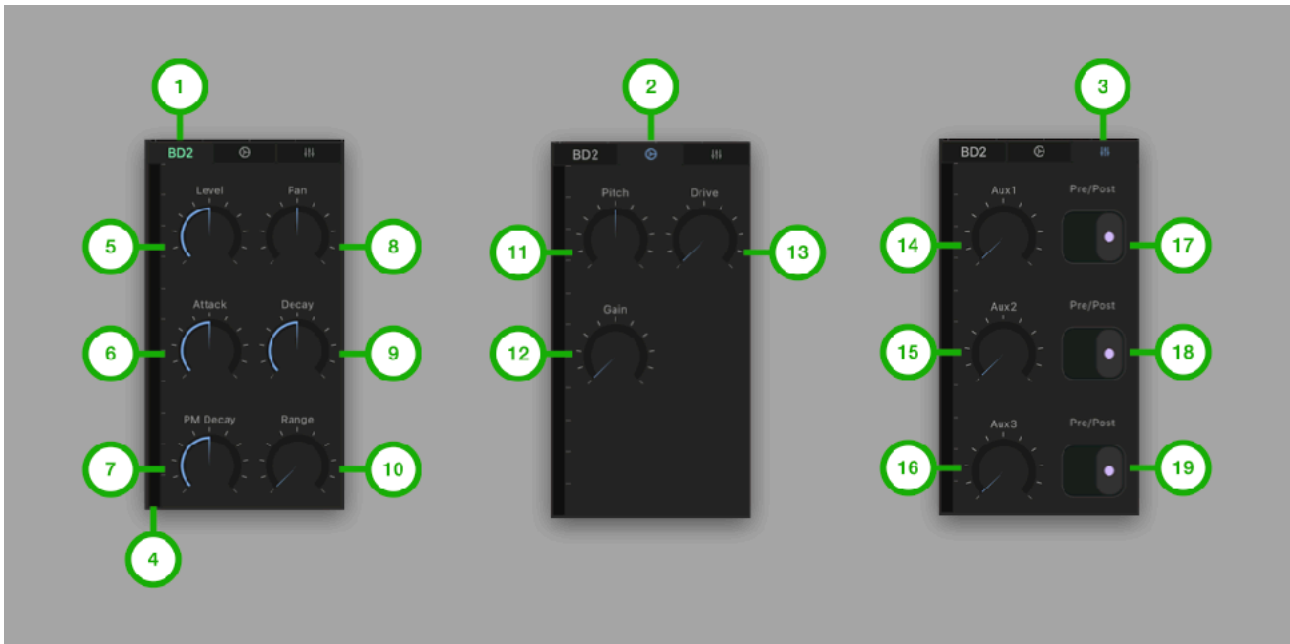
### 12. Aux2 Pre / Post

Select source signal to send aux2

### 13. Aux3 Pre / Post

Select source signal to send aux3

## BD2 (Bass Drum 2)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Attack

Adjust amount of the attack sound

### 7. PM Decay

Adjust decay of pitch modulation envelope

### 8. Pan

Adjust pan

### 9. Decay

Adjust decay

### 10. Range

Adjust decay range

### 11. Pitch

Adjust pitch of the oscillator

### 12. Gain

Adjust gain

### 13. Drive

Adjust amount of distortion

### 14. Aux1 Send Level

Adjust aux1 (delay) send level

### 15. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 16. Aux3 Send Level

Adjust aux3 (reverb) send level

### 17. Aux1 Pre / Post

Select source signal to send aux1

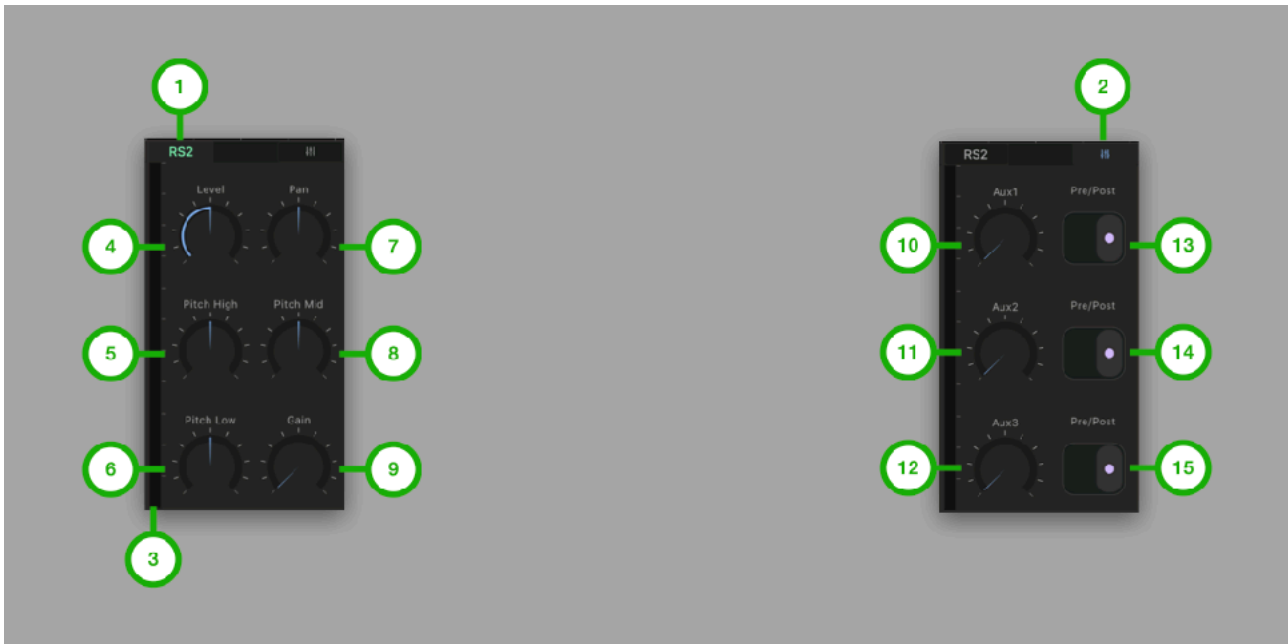
### 18. Aux2 Pre / Post

Select source signal to send aux2

### 19. Aux3 Pre / Post

Select source signal to send aux3

## RS2 (Rim Shot 2)



### 1. Main Tab

Tap to Select Main Tab

### 2. Aux Tab

Tap to select Aux Tab

### 3. Level Meter

Indicate output level

### 4. Level

Adjust level

### 5. Pitch High

Adjust pitch of the high oscillator

### 6. Pitch Low

Adjust pitch of the low oscillator

### 7. Pan

Adjust pan

### 8. Pitch Mid

Adjust pitch of the mid oscillator

### 9. Gain

Adjust gain

### 10. Aux1 Send Level

Adjust aux1 (delay) send level

### 11. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 12. Aux3 Send Level

Adjust aux3 (reverb) send level

### 13. Aux1 Pre / Post

Select source signal to send aux1

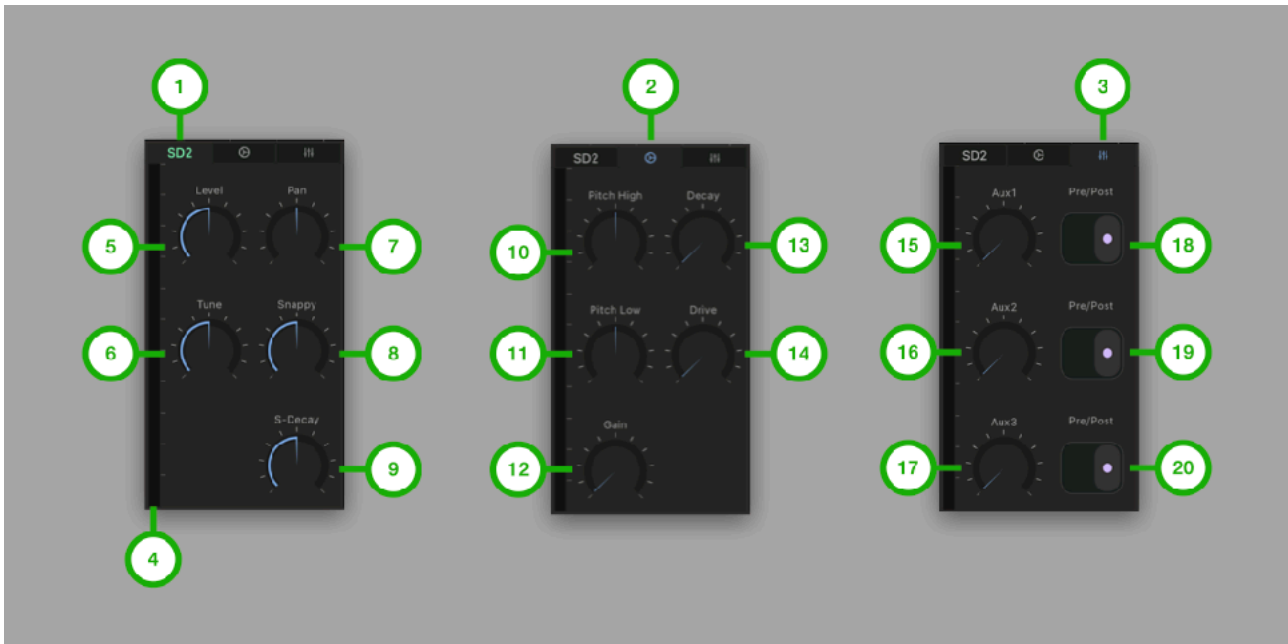
### 14. Aux2 Pre / Post

Select source signal to send aux2

### 15. Aux3 Pre / Post

Select source signal to send aux3

## SD2 (Snare Drum 2)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Tune

Adjust pitch

### 7. Pan

Adjust pan

### 8. Snappy

Adjust amount of metallic sound

### 9. S-Decay

Adjust decay of metallic sound

### 10. Pitch High

Adjust pitch of high oscillator

### 11. Pitch Low

Adjust pitch of low oscillator

### 12. Gain

Adjust gain

### 13. Decay

Adjust decay of amp envelope

### 14. Drive

Adjust amount of distortion

### 15. Aux1 Send Level

Adjust aux1 (delay) send level

### 16. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 17. Aux3 Send Level

Adjust aux3 (reverb) send level

### 18. Aux1 Pre / Post

Select source signal to send aux1

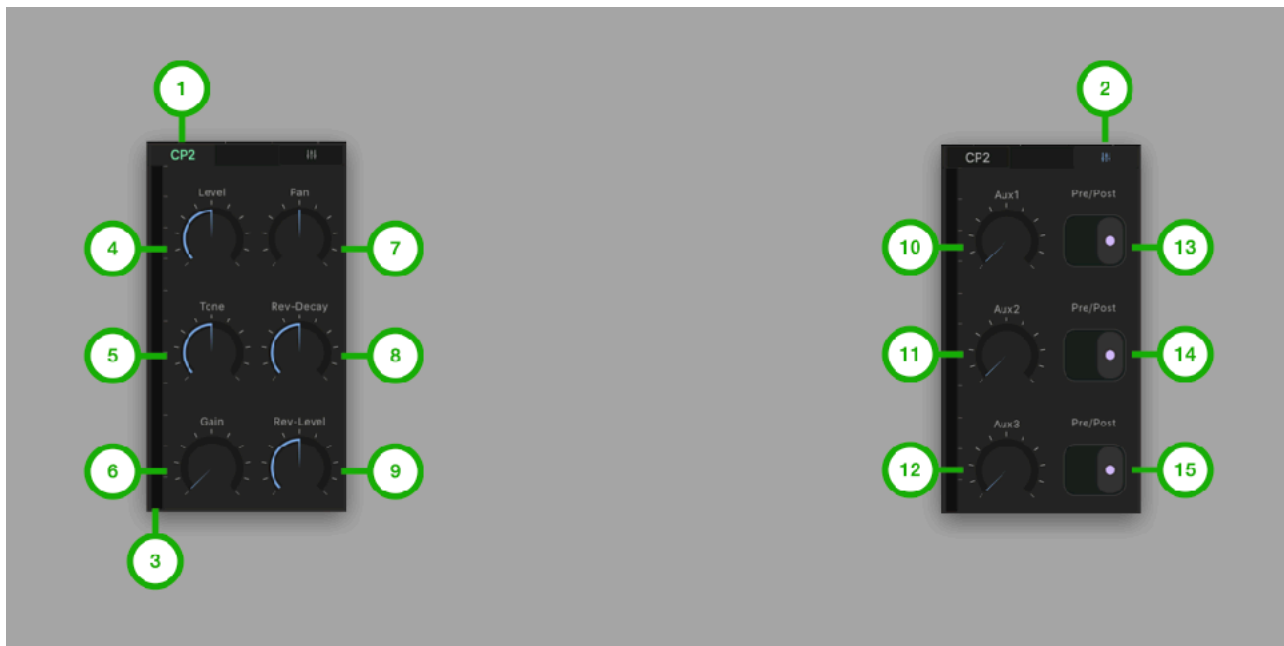
### 19. Aux2 Pre / Post

Select source signal to send aux2

### 20. Aux3 Pre / Post

Select source signal to send aux3

## CP2 (Hand Clap 2)



### 1. Main Tab

Tap to Select Main Tab

### 2. Aux Tab

Tap to select Aux Tab

### 3. Level Meter

Indicate output level

### 4. Level

Adjust level

### 5. Tone

Adjust tone

### 6. Gain

Adjust gain

### 7. Pan

Adjust pan

### 8. Rev-Decay

Adjust decay of the artificial reverberation sound

### 9. Rev-Level

Adjust level of the artificial reverberation sound

### 10. Aux1 Send Level

Adjust aux1 (delay) send level

### 11. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 12. Aux3 Send Level

Adjust aux3 (reverb) send level

### 13. Aux1 Pre / Post

Select source signal to send aux1

### 14. Aux2 Pre / Post

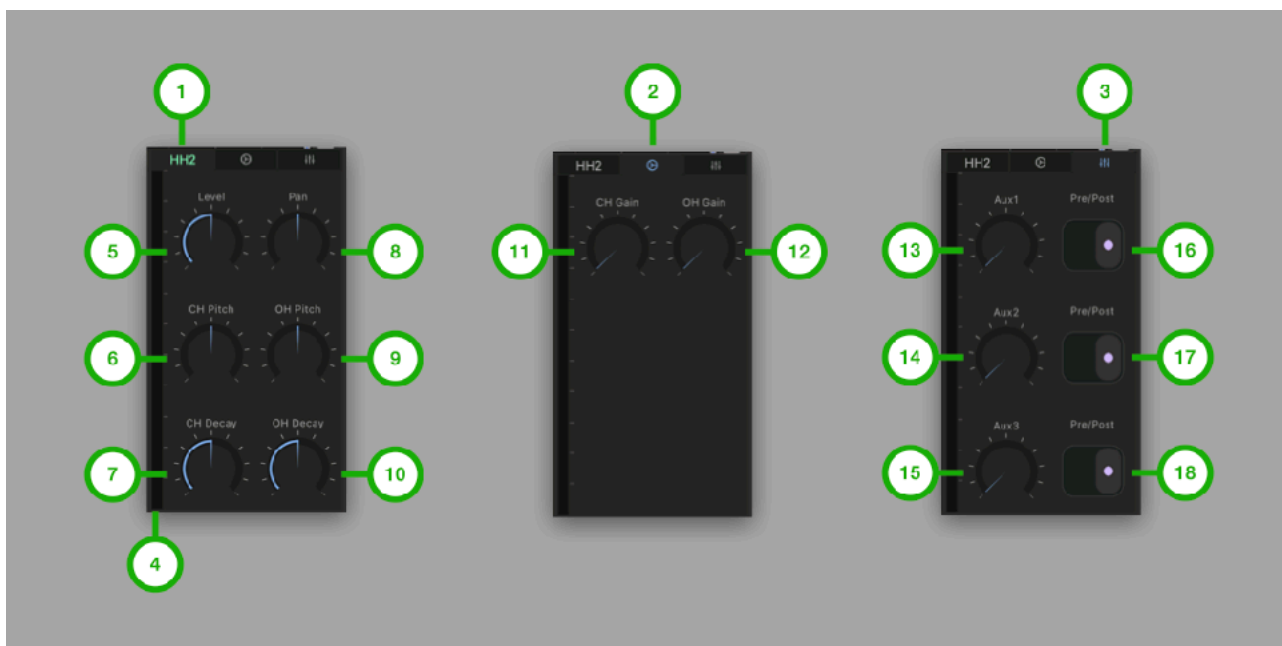
Select source signal to send aux2

### 15. Aux3 Pre / Post

Select source signal to send aux3



## HH2 (Hi-Hat 2)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. CH Pitch

Adjust pitch (playback speed) of closed hi-hat

### 7. CH Decay

Adjust decay of amp envelope for closed hi-hat

### 8. Pan

Adjust pan

### 9. OH Pitch

Adjust pitch (playback speed) of open hi-hat

### 10. OH Decay

Adjust decay of amp envelope for open hi-hat

### 11. CH Gain

adjust gain of closed hi-hat

### 12. OH Gain

adjust gain of open hi-hat

### 13. Aux1 Send Level

Adjust aux1 (delay) send level

### 14. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 15. Aux3 Send Level

Adjust aux3 (reverb) send level

### 16. Aux1 Pre / Post

Select source signal to send aux1

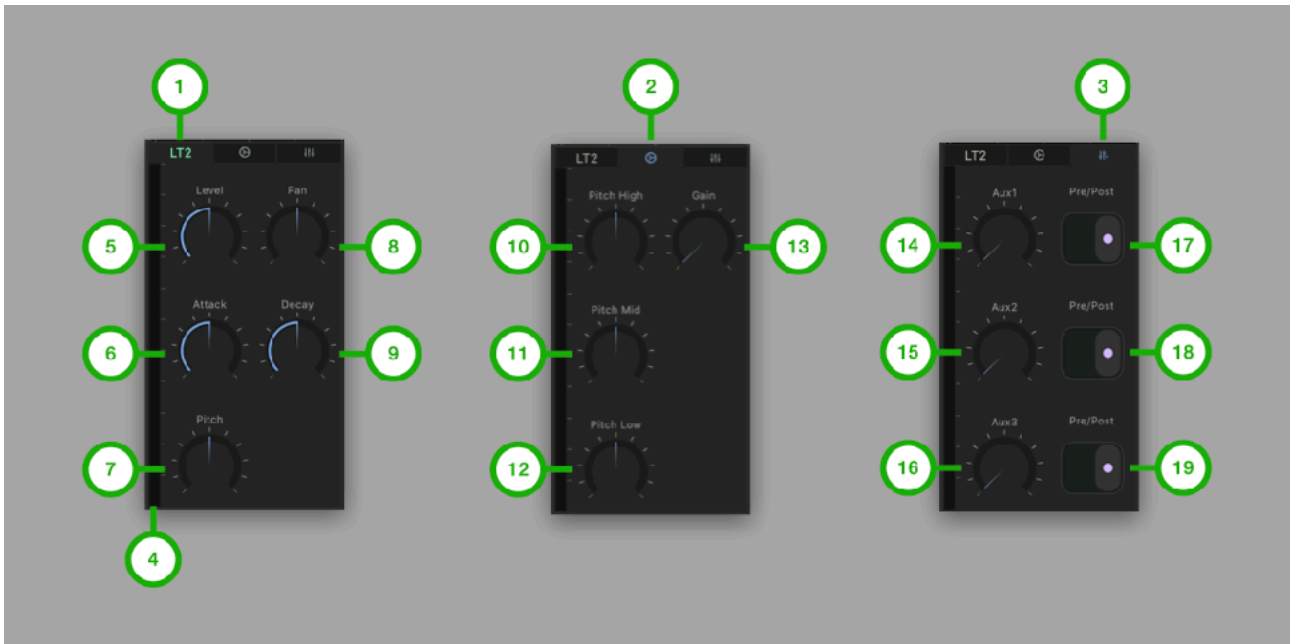
### 17. Aux2 Pre / Post

Select source signal to send aux2

### 18. Aux3 Pre / Post

Select source signal to send aux3

## LT2 (Low Tom 2)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Attack

Adjust amount of attack sound

### 7. Pitch

Adjust pitch

### 8. Pan

Adjust pan

### 9. Decay

Adjust decay

### 10. Pitch High

Adjust pitch of high oscillator

### 11. Pitch Mid

Adjust pitch of mid oscillator

### 12. Pitch Low

Adjust pitch of low oscillator

### 13. Gain

Adjust gain

### 14. Aux1 Send Level

Adjust aux1 (delay) send level

### 15. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 16. Aux3 Send Level

Adjust aux3 (reverb) send level

### 17. Aux1 Pre / Post

Select source signal to send aux1

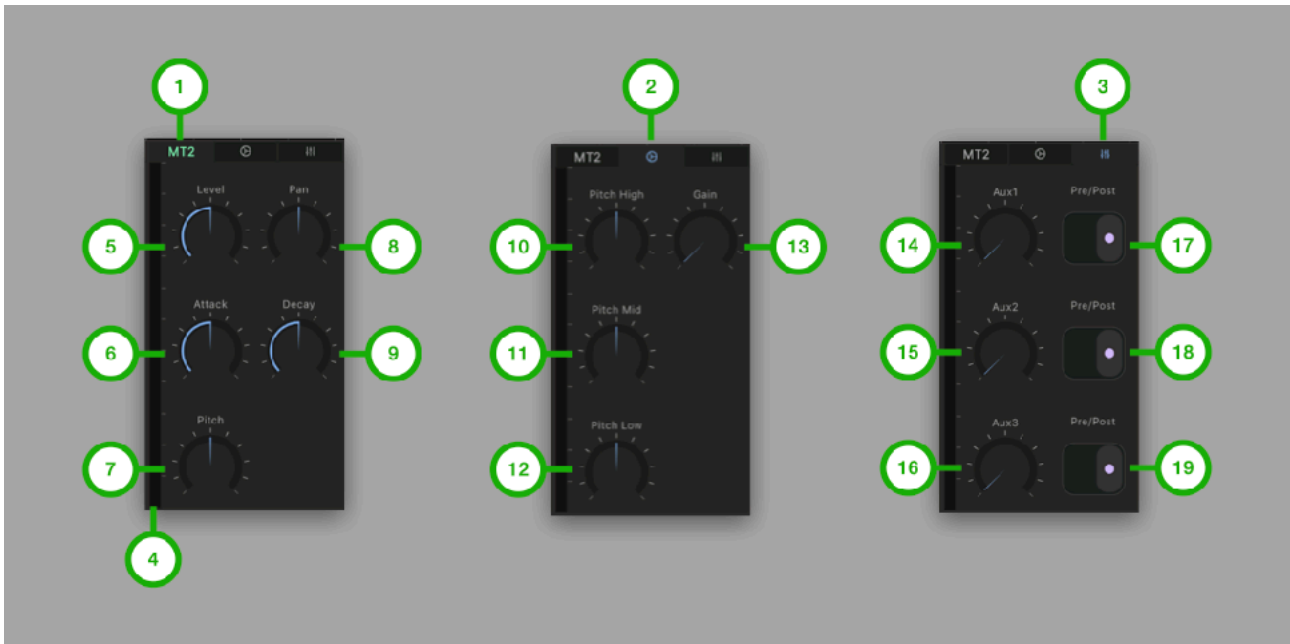
### 18. Aux2 Pre / Post

Select source signal to send aux2

### 19. Aux3 Pre / Post

Select source signal to send aux3

## MT2 (Mid Tom 2)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Attack

Adjust amount of attack sound

### 7. Pitch

Adjust pitch

### 8. Pan

Adjust pan

### 9. Decay

Adjust decay

### 10. Pitch High

Adjust pitch of high oscillator

### 11. Pitch Mid

Adjust pitch of mid oscillator

### 12. Pitch Low

Adjust pitch of low oscillator

### 13. Gain

Adjust gain

### 14. Aux1 Send Level

Adjust aux1 (delay) send level

### 15. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 16. Aux3 Send Level

Adjust aux3 (reverb) send level

### 17. Aux1 Pre / Post

Select source signal to send aux1

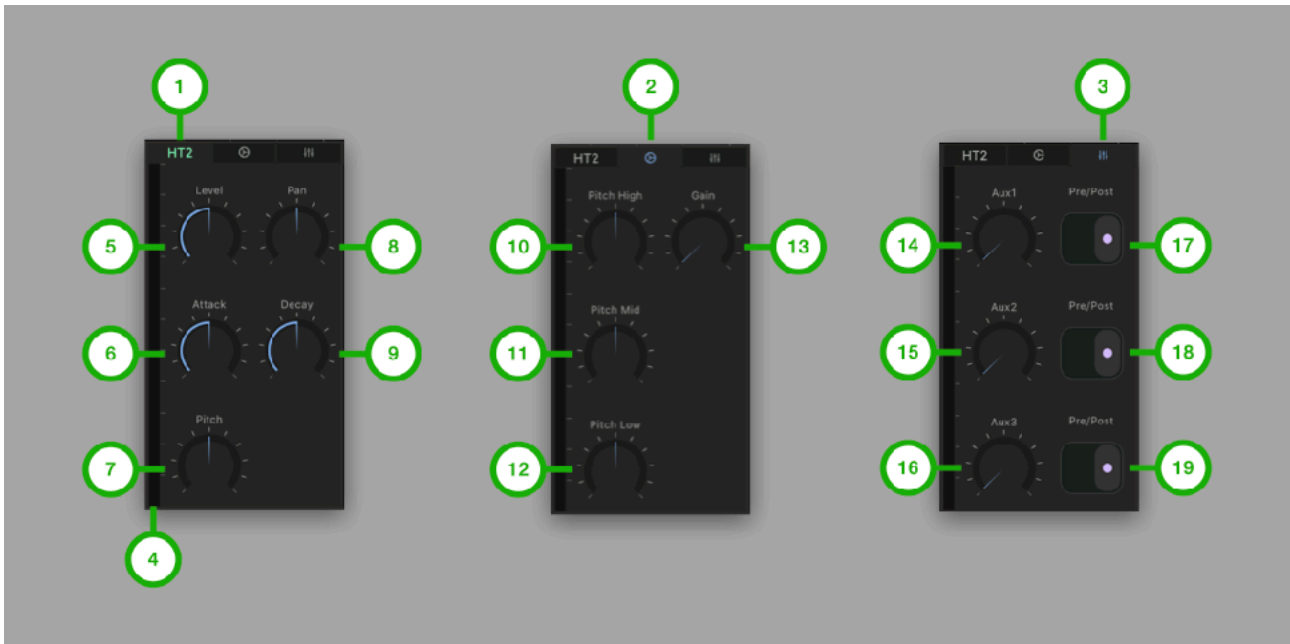
### 18. Aux2 Pre / Post

Select source signal to send aux2

### 19. Aux3 Pre / Post

Select source signal to send aux3

## HT2 (High Tom 2)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Aux Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Level

Adjust level

### 6. Attack

Adjust amount of attack sound

### 7. Pitch

Adjust pitch

### 8. Pan

Adjust pan

### 9. Decay

Adjust decay

### 10. Pitch High

Adjust pitch of high oscillator

### 11. Pitch Mid

Adjust pitch of mid oscillator

### 12. Pitch Low

Adjust pitch of low oscillator

### 13. Gain

Adjust gain

### 14. Aux1 Send Level

Adjust aux1 (delay) send level

### 15. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 16. Aux3 Send Level

Adjust aux3 (reverb) send level

### 17. Aux1 Pre / Post

Select source signal to send aux1

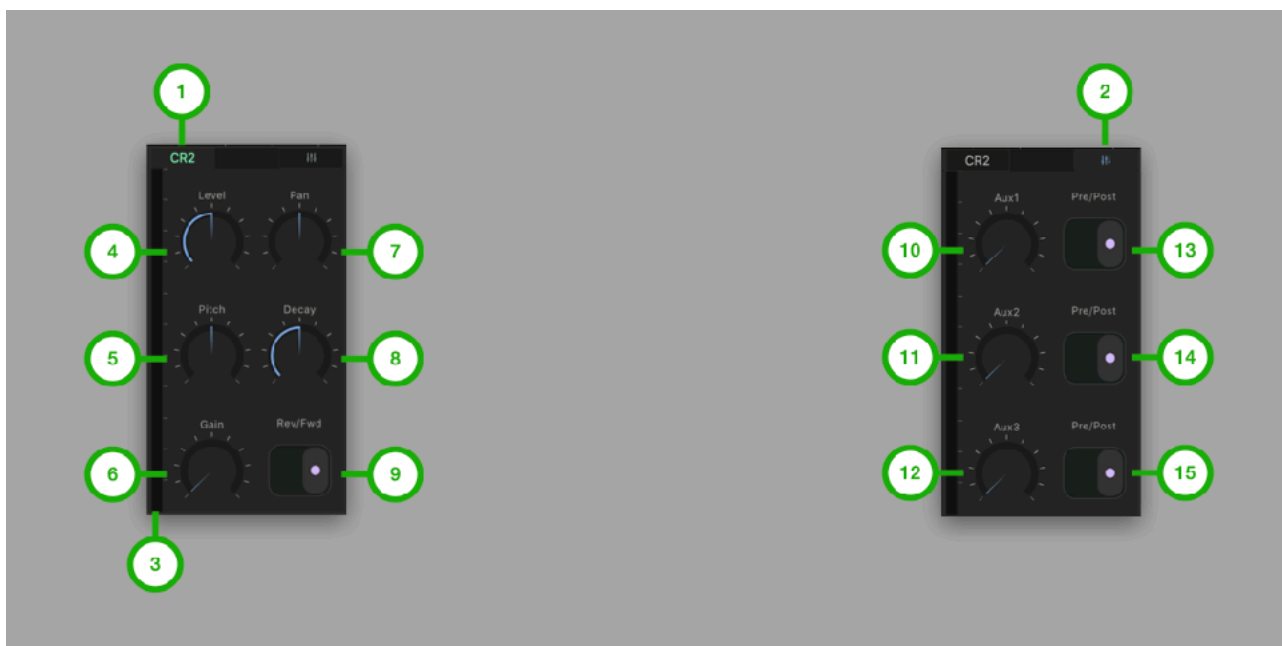
### 18. Aux2 Pre / Post

Select source signal to send aux2

### 19. Aux3 Pre / Post

Select source signal to send aux3

## CR2 (Crash Cymbal)



### 1. Main Tab

Tap to Select Main Tab

### 2. Aux Tab

Tap to select Aux Tab

### 3. Level Meter

Indicate output level

### 4. Level

Adjust level

### 5. Pitch

Adjust pitch (playback speed)

### 6. Gain

Adjust gain

### 7. Pan

Adjust pan

### 8. Decay

Adjust decay

### 9. Rev/Fwd

Select direction of play back (Reverse / Forward)

### 10. Aux1 Send Level

Adjust aux1 (delay) send level

### 11. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 12. Aux3 Send Level

Adjust aux3 (reverb) send level

### 13. Aux1 Pre / Post

Select source signal to send aux1

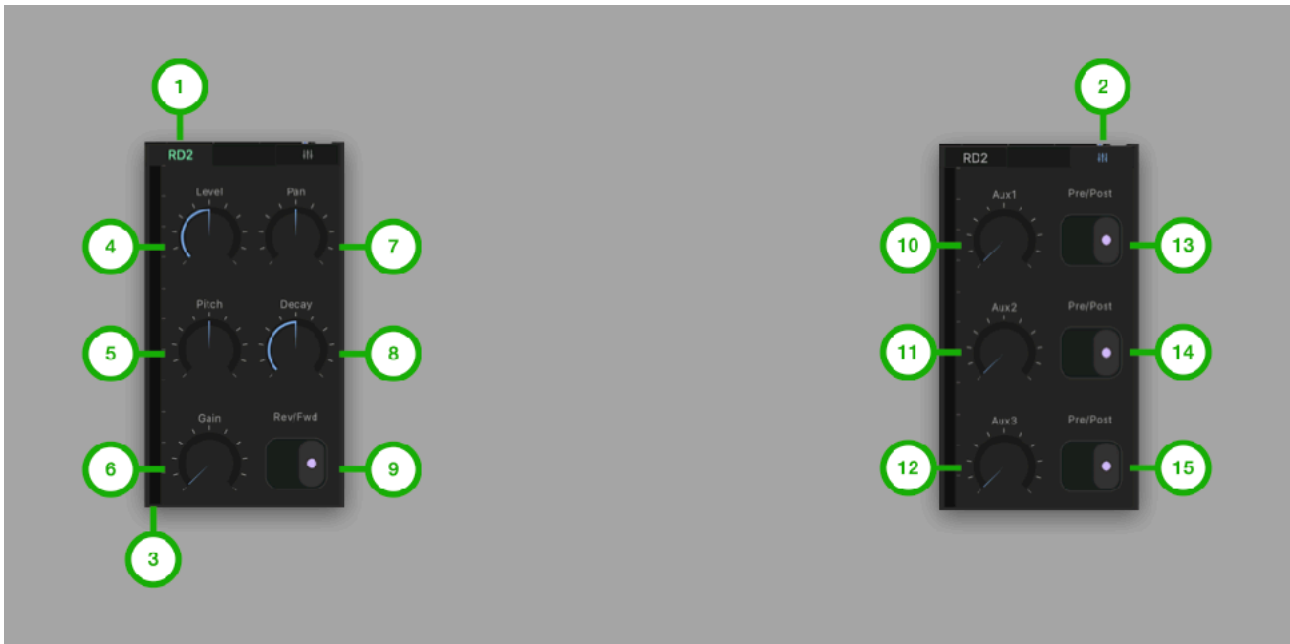
### 14. Aux2 Pre / Post

Select source signal to send aux2

### 15. Aux3 Pre / Post

Select source signal to send aux3

## RD2 (Ride Cymbal)



### 1. Main Tab

Tap to Select Main Tab

### 2. Aux Tab

Tap to select Aux Tab

### 3. Level Meter

Indicate output level

### 4. Level

Adjust level

### 5. Pitch

Adjust pitch (playback speed)

### 6. Gain

Adjust gain

### 7. Pan

Adjust pan

### 8. Decay

Adjust decay

### 9. Rev/Fwd

Select direction of play back (Reverse / Forward)

### 10. Aux1 Send Level

Adjust aux1 (delay) send level

### 11. Aux2 Send Level

Adjust aux2 (chorus / Flanger) send level

### 12. Aux3 Send Level

Adjust aux3 (reverb) send level

### 13. Aux1 Pre / Post

Select source signal to send aux1

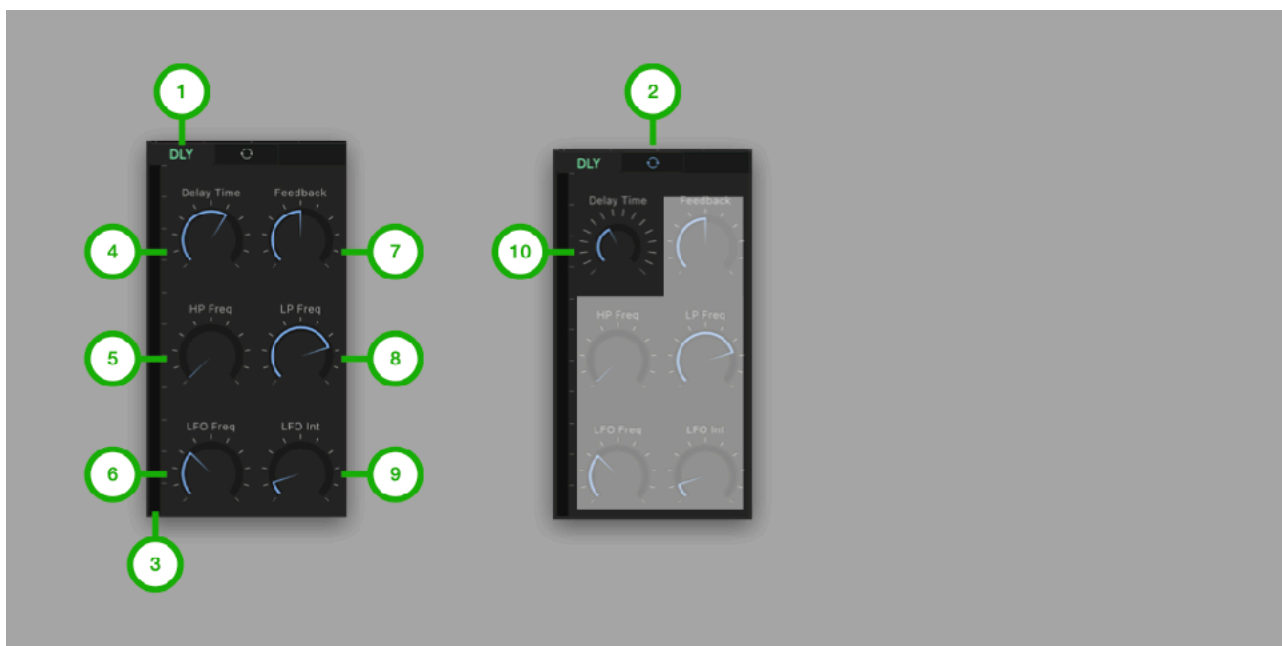
### 14. Aux2 Pre / Post

Select source signal to send aux2

### 15. Aux3 Pre / Post

Select source signal to send aux3

## DLY (Delay)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sync Switch

Tap to enable / disable tempo sync

### 3. Level Meter

Indicate output level

### 4. Delay Time

Adjust delay time

### 5. HP Freq

Adjust frequency of high pass filter for the delayed sound

### 6. LFO Freq

Adjust frequency of LFO (low frequency oscillator)

### 7. Feedback

Adjust amount of the feedback

### 8. LP Freq

Adjust frequency of low pass filter for the delayed sound

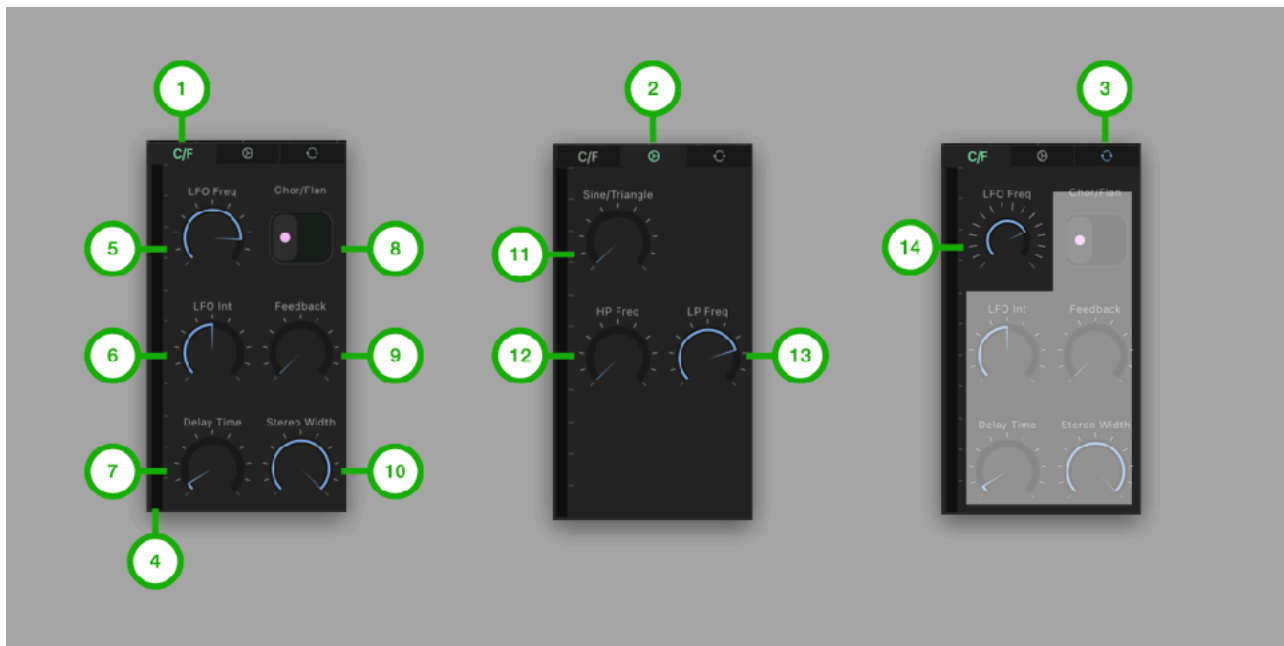
### 9. LFO Int

Adjust amount of delay time modulation

### 10. Delay Time (sync)

Adjust delay time which is synced to the current tempo

## C/F (Chorus / Flanger)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Sync Switch

Tap to enable / disable tempo sync

### 4. Level Meter

Indicate output level

### 5. LFO Freq

Adjust frequency of the LFO

### 6. LFO Int

Adjust amount of delay time modulation

### 7. Delay Time

Adjust delay time

### 8. Chor/Flan

Select Chorus or Flanger

### 9. Feedback

Adjust amount of the feedback

### 10. Stereo Width

Adjust stereo width

### 11. Sine/Triangle

Adjust shape of the LFO

### 12. HP Freq

Adjust frequency of high pass filter for the effected sound

### 13. LP Freq

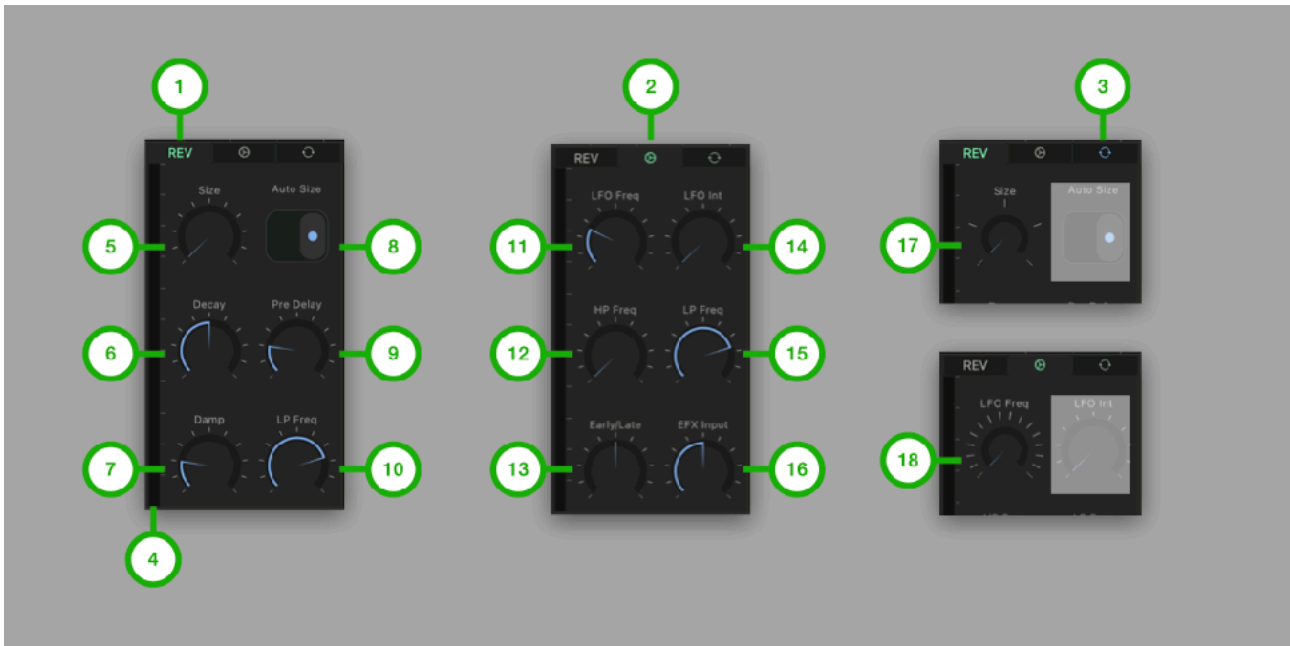
Adjust frequency of high pass filter for the effected sound

### 14. LFO Freq (sync)

Adjust LFO frequency which is synced to the current tempo



## REV (Reverb)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Sync Switch

Tap to enable / disable tempo sync

### 4. Level Meter

Indicate output level

### 5. Size

Adjust room size of the late reflection

### 6. Decay

Adjust decay of the late reflection

### 7. Damp

Adjust absorption of high frequency in the late reflection

### 8. Auto Size

Select to enable / disable auto size mode

### 9. Pre Delay

Adjust pre delay time of the early reflection

### 10. LP Freq

Adjust frequency of output low pass filter

### 11. LFO Freq

Adjust frequency of LFO (low Frequency oscillator)

### 12. HP Freq

Adjust frequency of input high pass filter

### 13. Early/Late

Adjust amount of the early reflection and amount of the late reflection

### 14. LFO Int

Adjust amount of delay time modulation

### 15. LP Freq

Adjust frequency of input low pass filter

### 16. EFX Input

Adjust amount of input signal from delay and chorus.

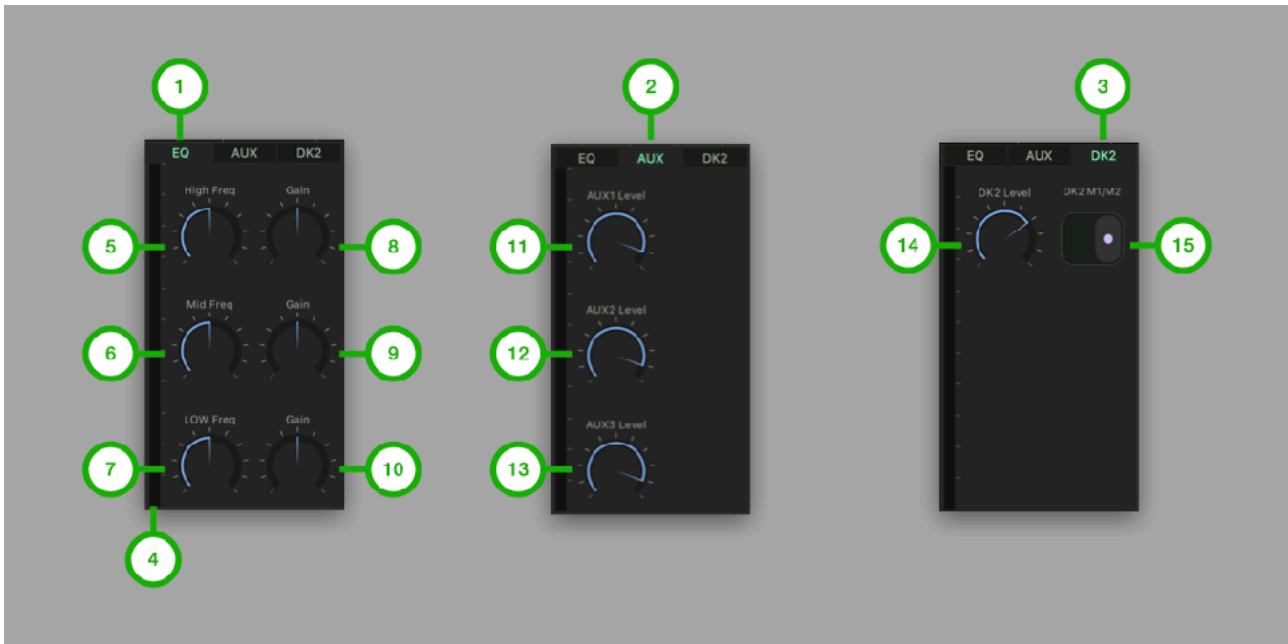
### 17. Size (sync)

Adjust room size which is synced to the current tempo

### 18. LFO Freq (sync)

Adjust LFO frequency which is synced to the current tempo

## EQ (3 Band EQ / Mixer)



### 1. Main Tab

Tap to Select Main Tab

### 2. Aux Tab

Tap to select Aux Tab

### 3. DK2 Tab

Tap to select DK2 (drum kit 2) Tab

### 4. Level Meter

Indicate output level

### 5. High Freq

Adjust frequency of high shelving filter

### 6. Mid Freq

Adjust frequency of mid peak / notch filter

### 7. Low Freq

Adjust frequency of low shelving filter

### 8. High Gain

Adjust gain of the high shelving filter

### 9. Mid Gain

Adjust gain of the mid peak / notch filter

### 10. Low Gain

Adjust gain of the low shelving filter

### 11. Aux1 Level

Adjust level of aux1 (delay)

### 12. Aux2 Level

Adjust level of aux2 (chorus / flanger)

### 13. Aux3 Level

Adjust level of aux3 (reverb)

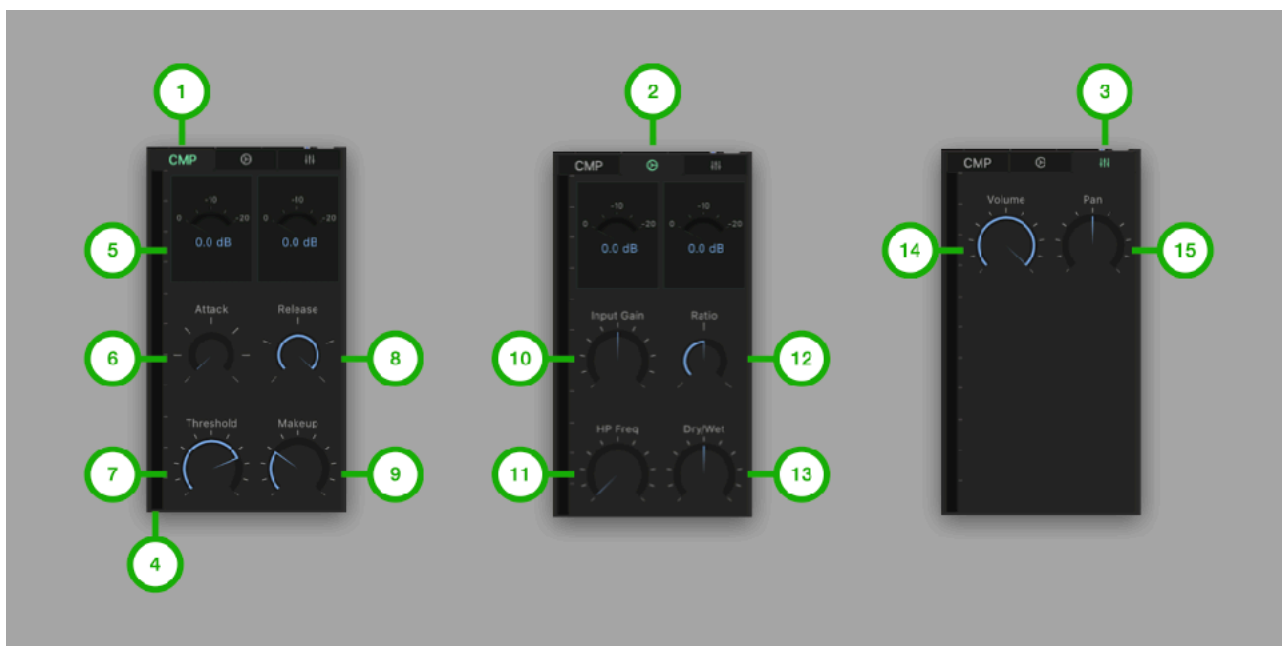
### 14. DK2 Level

Adjust level of drum kit 2

### 15. DK2 M1/M2

Select master volume mode of drum kit 2

## CMP (Compressor)



### 1. Main Tab

Tap to Select Main Tab

### 2. Sub Tab

Tap to select Sub Tab

### 3. Master Tab

Tap to select Aux Tab

### 4. Level Meter

Indicate output level

### 5. Reduction Gain Meter

Indicate amount of gain reduction

### 6. Attack

Adjust time to start compression

### 7. Threshold

Adjust level of threshold to begin compression

### 8. Release

Adjust time to end compression

### 9. Makeup

Adjust amount of makeup gain

### 10. Input Gain

Adjust amount of input gain

### 11. HP Freq

Adjust frequency of high pass filter at the input of the compressor

### 12. Ratio

Adjust compression ratio

### 13. Dry/Wet

Adjust amount of the dry and wet signal

### 14. Volume

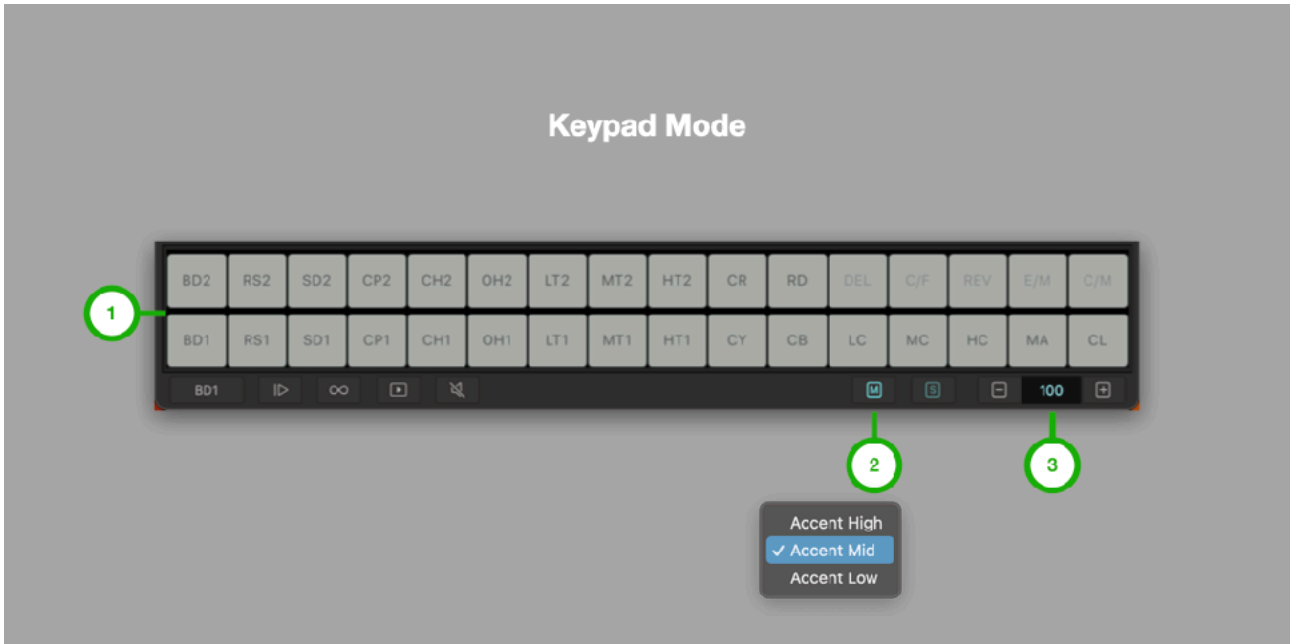
Adjust master volume

### 15. Pan

Adjust master pan

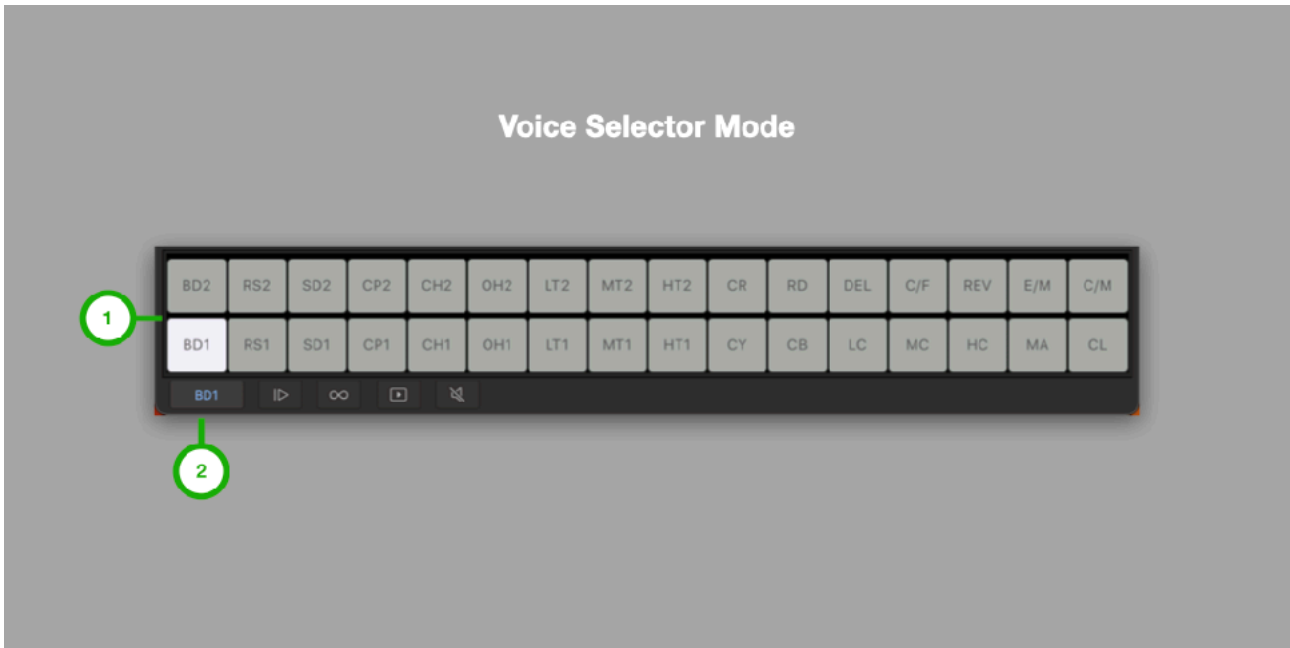
# Keypad

## Keypad Mode



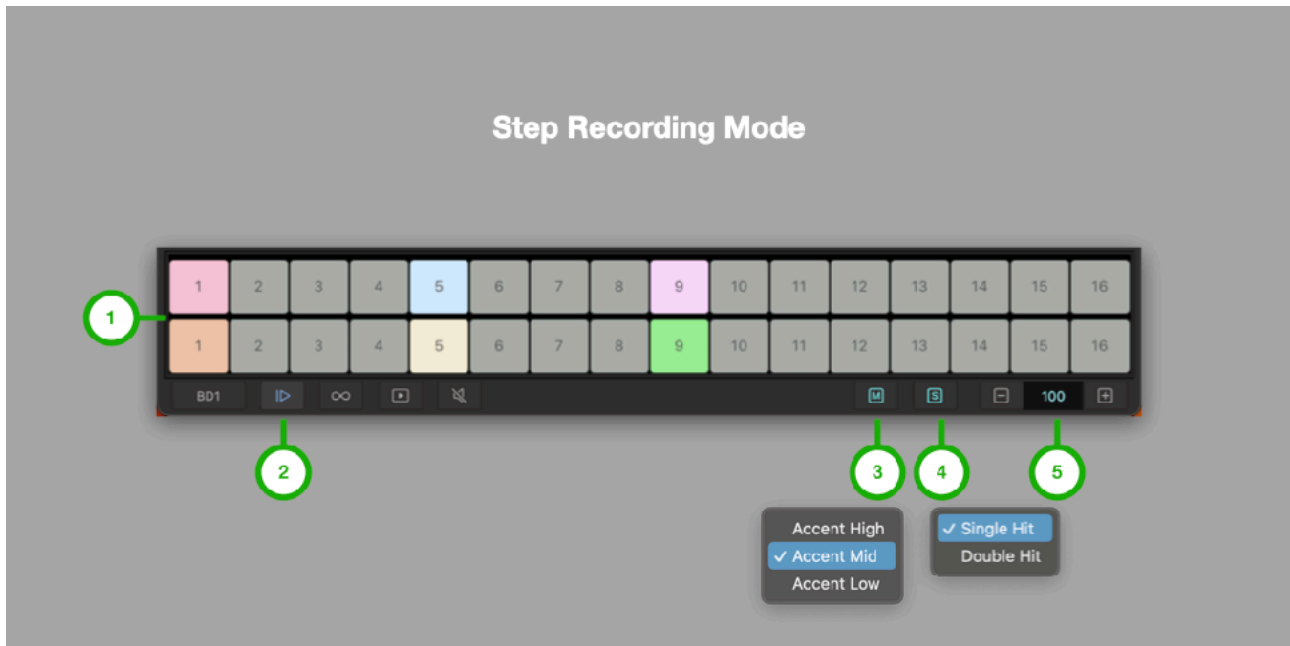
1. Keypad  
Tap to play sound
2. Accent  
Tap to show accent menu
3. Velocity  
Adjust velocity of the keypad

## Voice Selector Mode



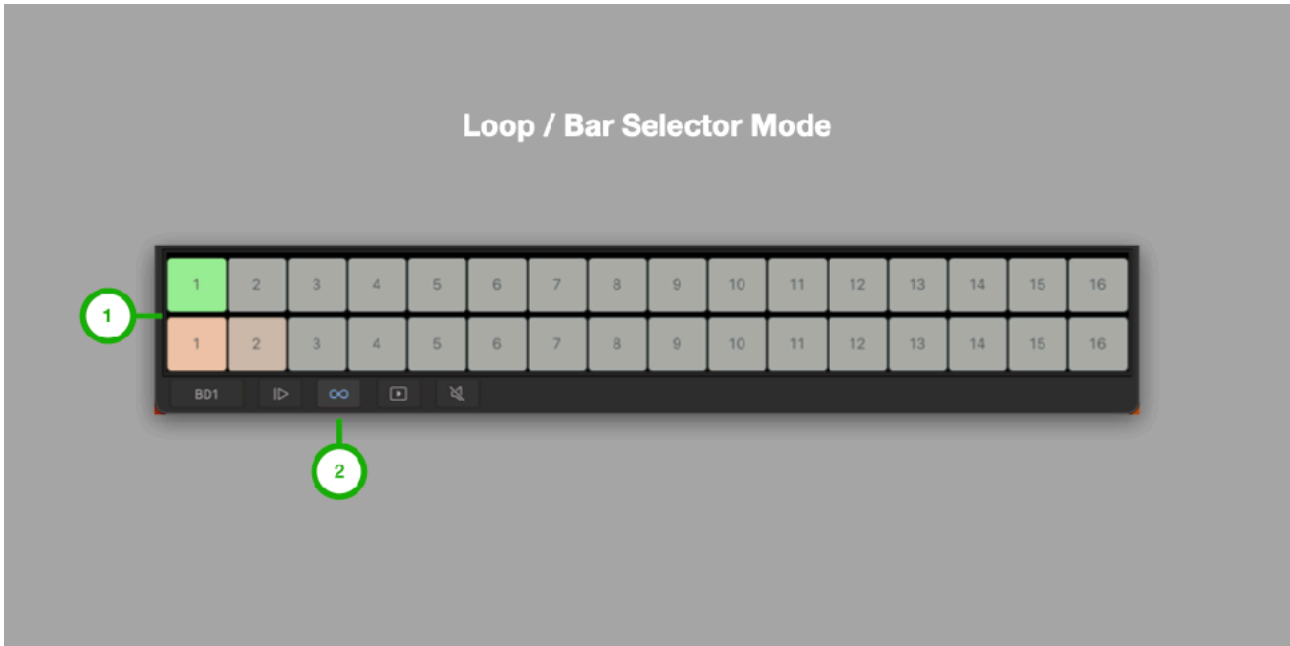
1. Keypad  
Tap to select drum voice or effect
2. Voice Select Mode  
Tap to enable / disable voice selector mode

## Step Recording Mode



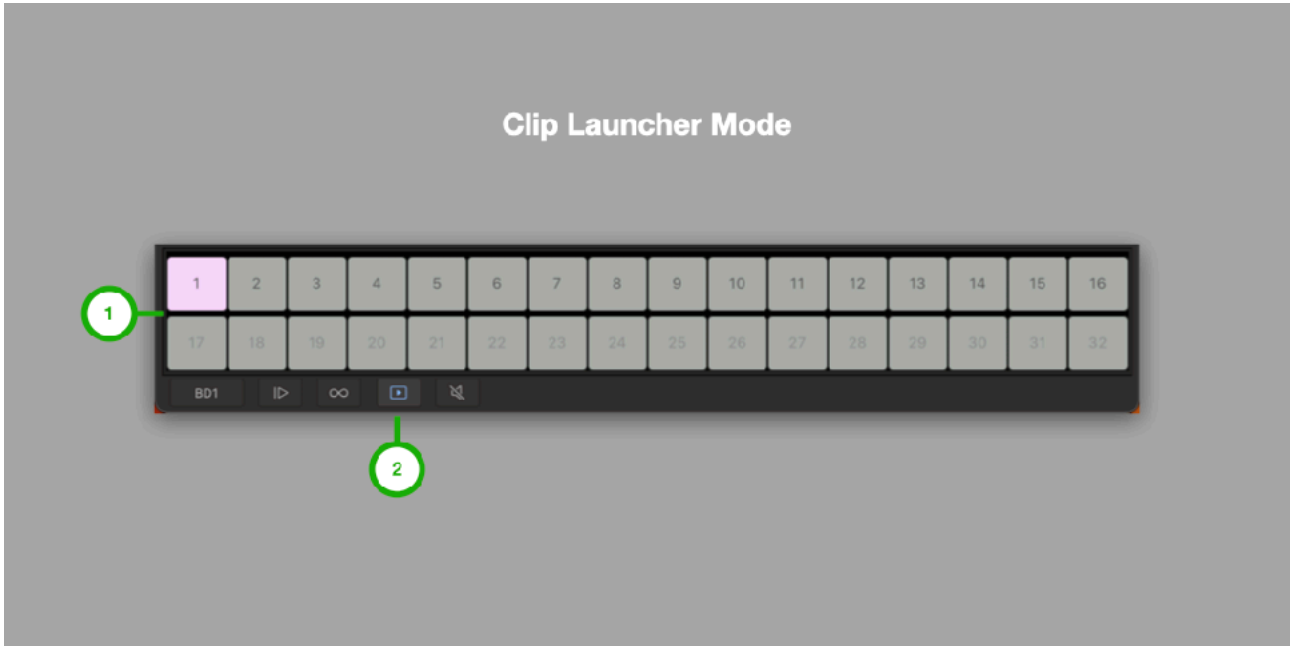
1. Keypad  
Tap to program note for the selected voice
2. Step Recording Mode  
Tap to enable / disable step recording mode
3. Accent  
Tap to show accent menu
4. Hit Type  
Tap to show hit type menu
5. Velocity  
Adjust velocity of the note

## Loop / Bar Selector Mode



1. Keypad  
Tap to set loop length (Green) or select bar for editing (Orange)
2. Loop / Bar Selection Mode  
Tap to enable / disable loop / bar selection mode

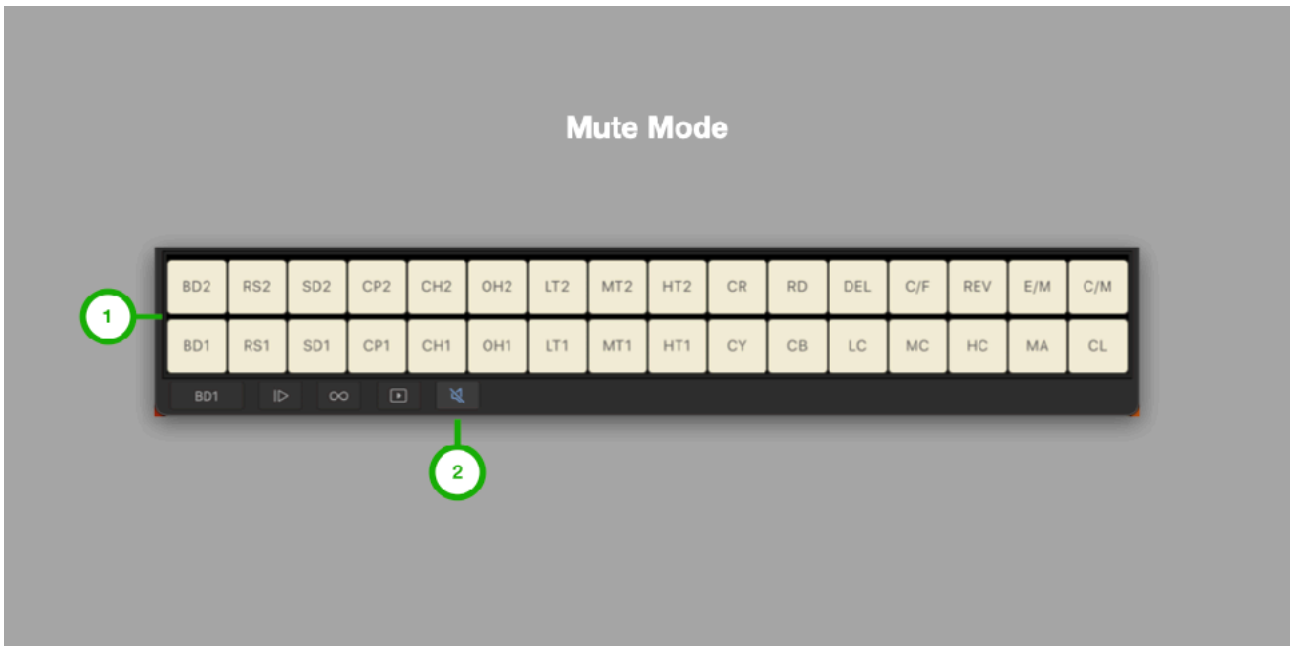
## Clip Launcher Mode



1. Keypad  
Tap to launch clip
2. Clip Launcher Mode  
Tap to enable / disable clip launcher mode

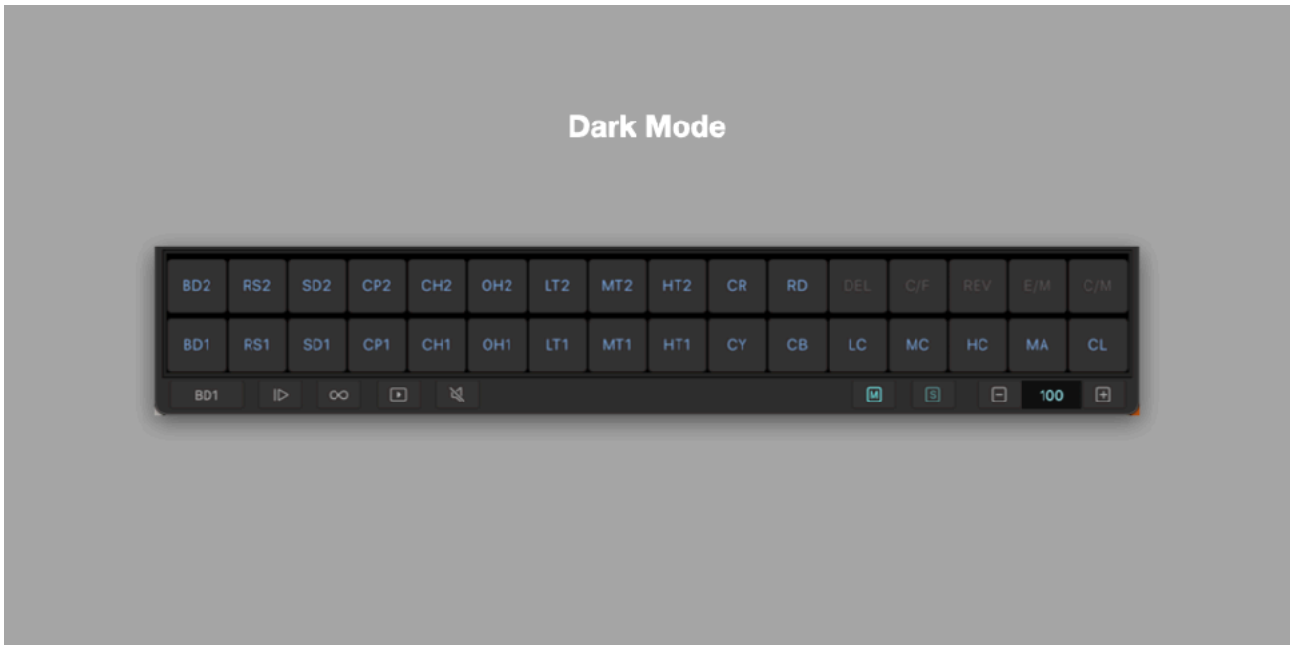


## Mute Mode

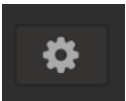


1. Keypad  
Tap to mute / unmute voice or effect
2. Mute Mode  
Tap to enable / disable mute mode

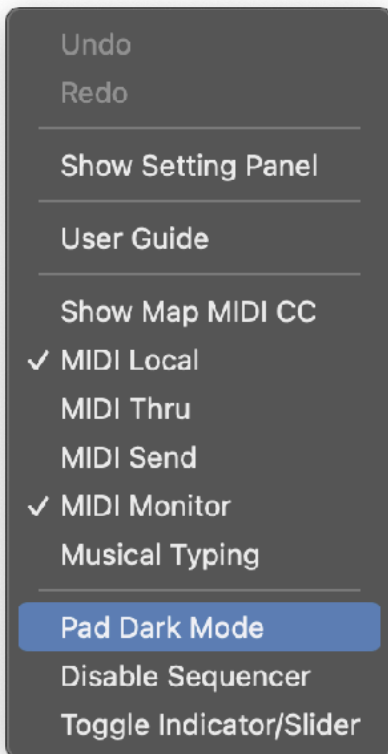
## Pad Dark Mode



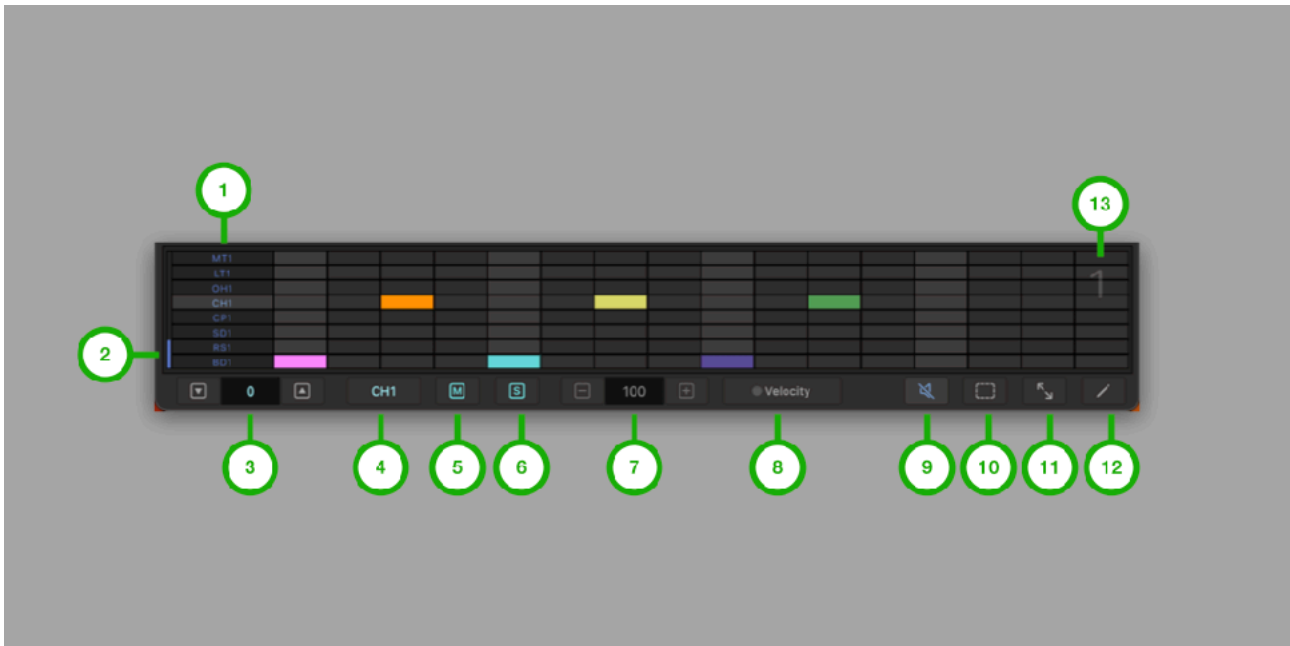
1. Tap Setting Button in Transport Bar to show setting menu



2. Select Pad Dark Mode from the menu



# Piano Roll Editor



1. Voice Selector  
Tap to select voice

2. Octave Indicator  
Indicate position of octave

3. Range  
Adjust note range of editor

4. Selected Voice  
Tap to show voice menu

5. Accent  
Tap to show accent menu

6. Hit Type  
Tap to show hit type menu

7. Velocity  
Indicate velocity of keypad or note

8. Velocity Switch  
Tap to enable / disable velocity mode

9. Mute  
Tap to enable / disable mute mode

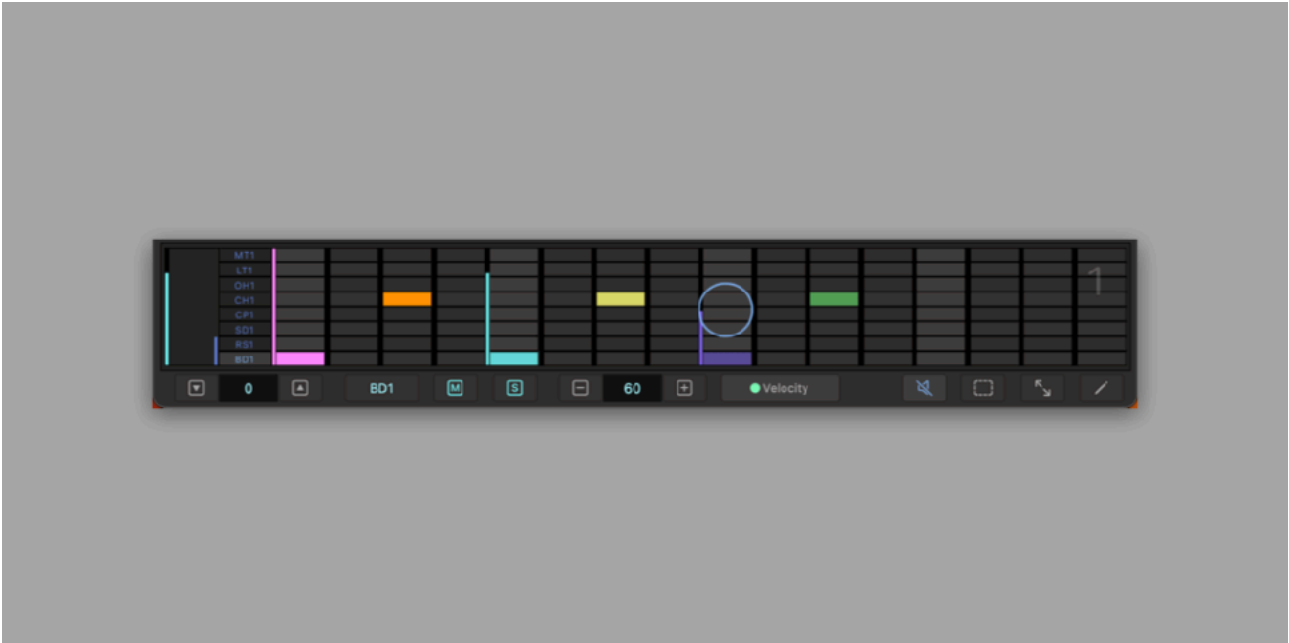
10. Select  
Tap to enable / disable selection mode

11. Overview  
Tap to show / hide overview

12. Edit  
Tap to show edit menu

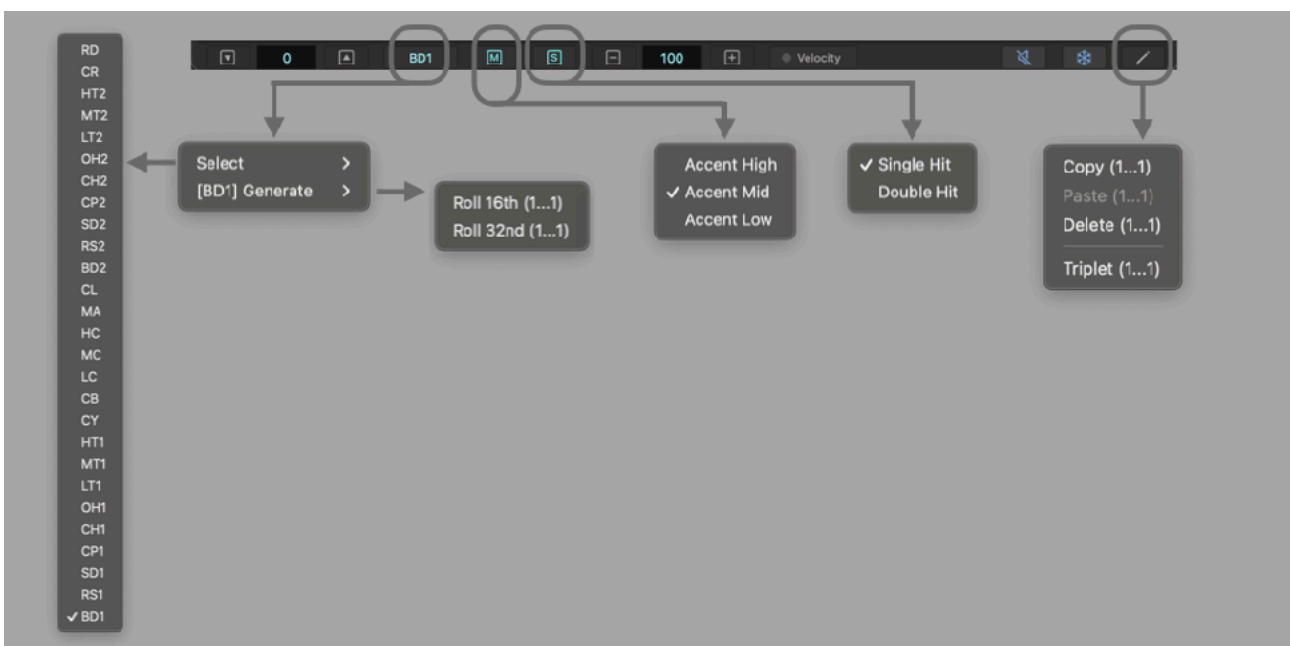
13. Bar Indicator  
Indicate selected bar for editing

## Velocity Editor

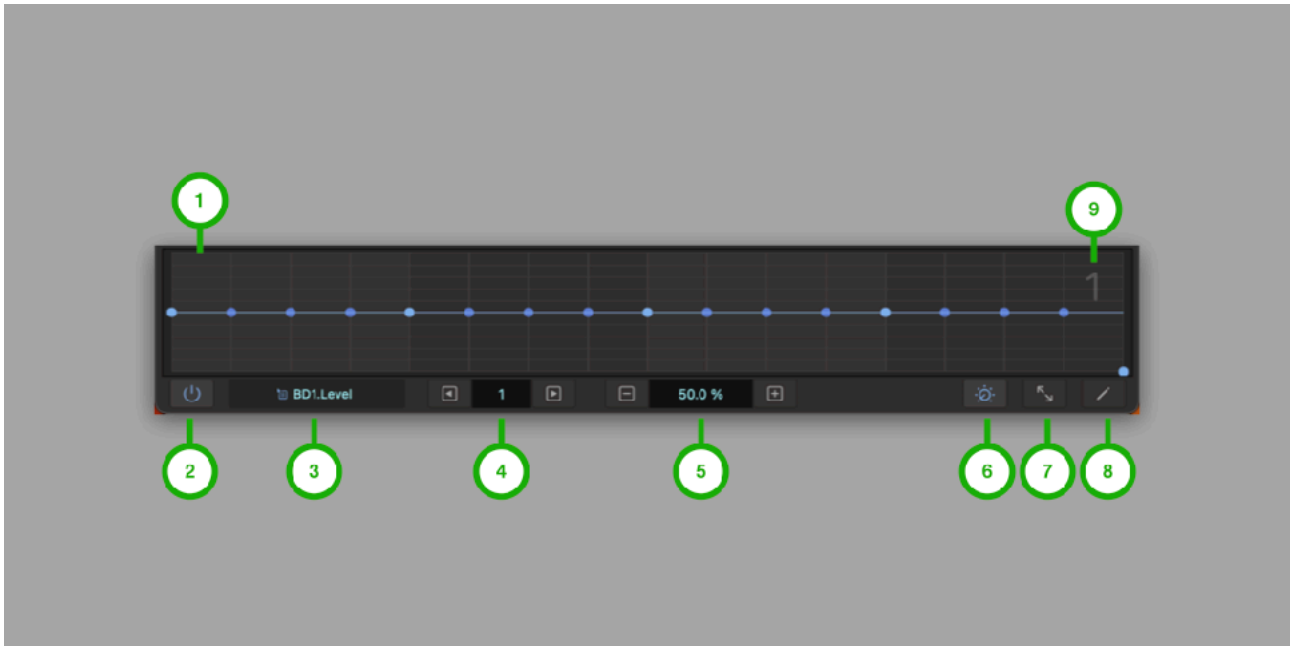


1. Tap velocity switch.
2. Tap on a note to show control.
3. Adjust velocity of the notes.

## Menu

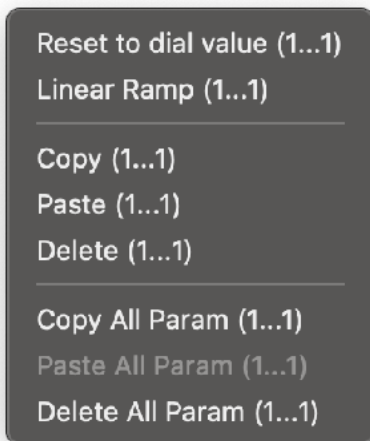


# Automation Editor

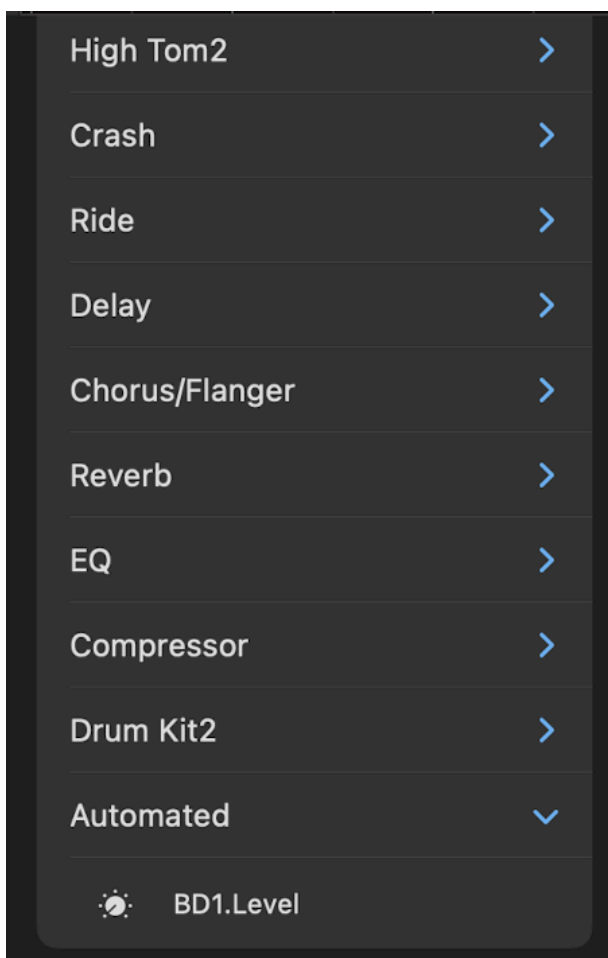


1. Parameter Value Editor  
Adjust value of parameter per step
2. Activation Switch  
Tap to enable / disable automation of the parameter
3. Parameter Name  
Indicate name of the parameter. Tap to show parameter list
4. Step Position  
Indicate step of parameter for editing
5. Parameter Value  
Indicate value of parameter for editing
6. Auto Link  
Tap to enable / disable auto link mode
7. Overview  
Tap to show / hide overview
8. Edit  
Tap to show edit menu
9. Bar Indicator  
Indicate selected bar for editing

## Edit Menu

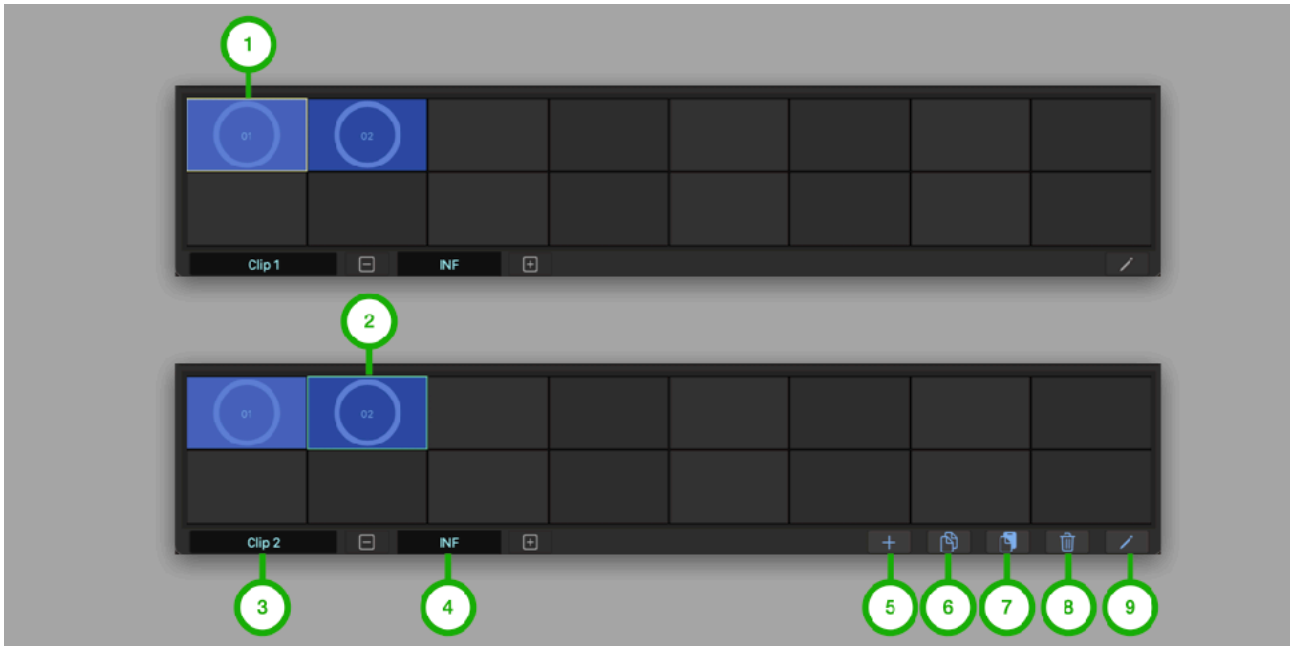


## Parameter List



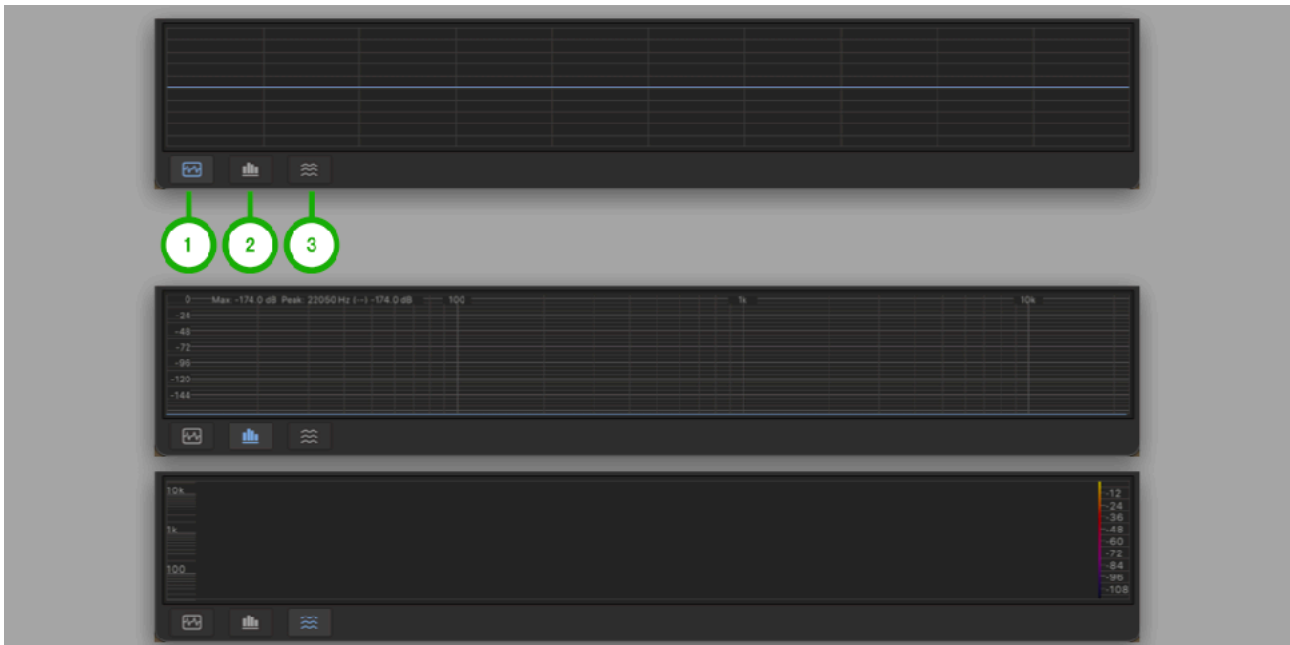
Automated parameters are listed in “Automated” category.

# Clip Editor



1. Active Clip  
Yellow border line indicates active clip which is currently loaded
2. Selected Clip  
Green border line indicate selected clip in editing mode
3. Clip Name  
Indicate name of the clip
4. Clip Length  
Indicate length of the clip
5. Add  
Tap to add new clip
6. Copy  
Tap to copy selected clip
7. Paste  
Tap to paste at the selected location
8. Delete  
Tap to delete selected clip
9. Edit  
Tap to enable / disable editing mode

# Scope



## 1. Oscilloscope

Tap to select oscilloscope.

## 2. Spectrum Analyzer

Tap to select spectrum analyzer. Long press on spectrum button (control + click on macOS) shows a menu to enable/disable auto scroll.



## 3. Spectrogram

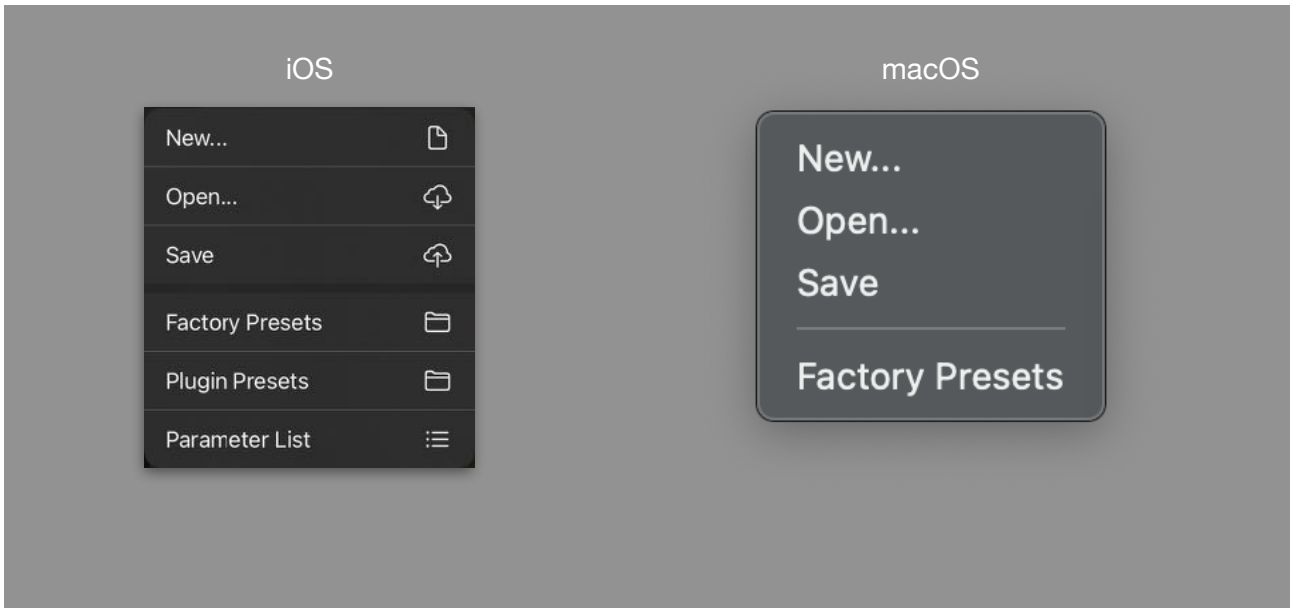
Tap to select spectrogram. Long press on spectrum button (control + click on macOS) shows a menu to select frequency mode for the spectrogram.





# Preset

Tap file button to show file menu.



---

## New...

Rest parameters and sequence data.

---

## Open...

Open a preset from iCloud drive.

---

## Save

Save a preset to iCloud drive.

---

## Factory Presets

Show / hide a list of the factory presets.

---

## Plugin Presets

Show / hide a list of the plugin presets.

---

## Parameter List

Show / hide a list of the parameters.

## iCloud Preset

iCloud presets are stored in iCloud Drive. Saved presets can be accessed from any iOS devices or macOS devices.

## Factory Presets

Select a preset name to load the preset.

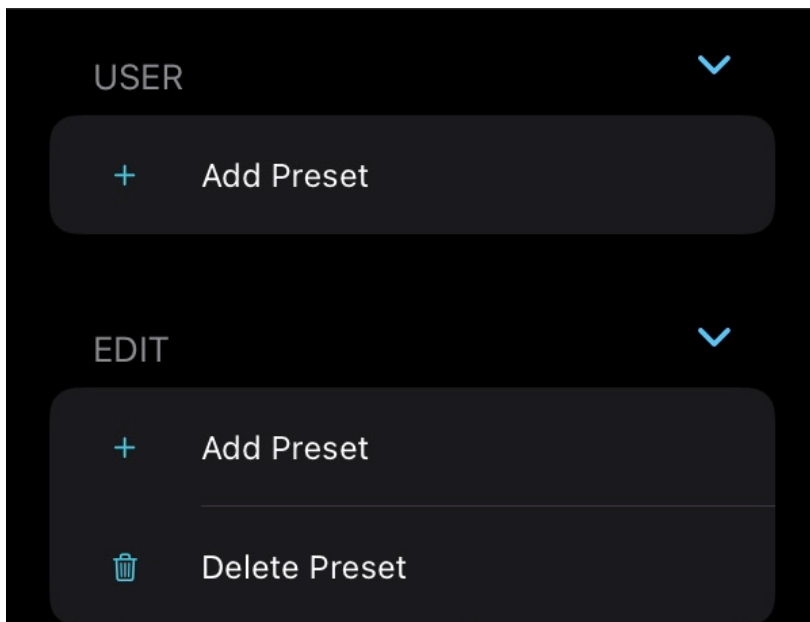
Factory preset has two categories, Sound and Rhythm.

Presets in Sound category contains only values of parameters. It doesn't contain any sequence data. When loading the preset, it will change the value of the parameters but sequence data remains the same.

Preset in Rhythm category contains value of parameters and sequence data.

## Plugin Preset (iOS)

Plugin presets are stored in plugin on the device. Saved preset can be accessed from any host application which support AUv3 User Preset on the device.



---

### Add Preset

Save a user preset in plug-in on the device.

---

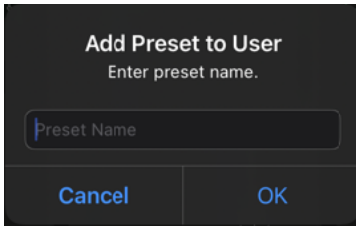
### Delete Preset

Enable edit mode to delete presets.

---

## How to save plugin preset

Select "Add Preset" from menu.



Type name then tap OK to save the preset. The preset is saved to the selected bank.

---

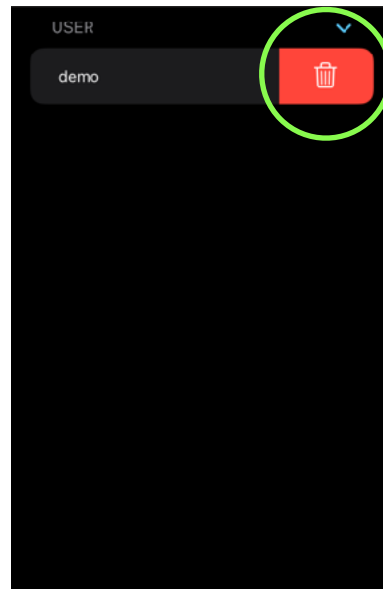
## How to delete plugin preset

Select "Delete Preset" from menu to enable edit mode.

Tap red minus button next to the name of the preset.



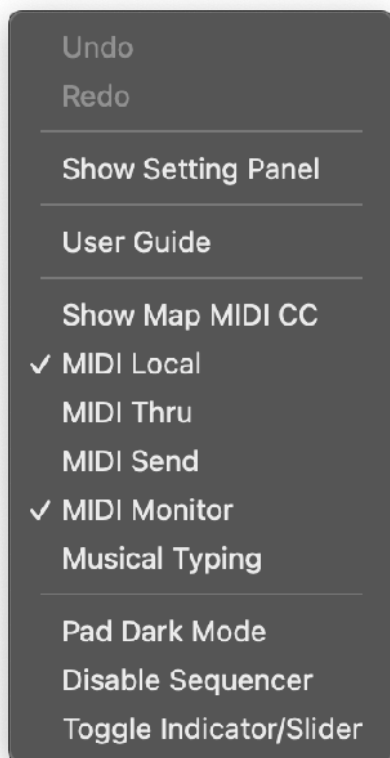
Tap red trash can icon to confirm the action.



# Settings

## Setting Menu

Tap setting button to show Setting Menu.



---

### Undo

Undo previous operation.

---

### Redo

Redo previous undo operation.

---

### Show Setting Panel

Open setting panel (stand alone)

---

### User Guide

Open this user guide.

---

### Show/Hide Map MIDI CC

Open or Close Map MIDI CC view.

---

### MIDI Local

When sending and receiving MIDI, connected device may send back the MIDI. This causes each notes to play twice. If this problem occurs, turn MIDI Local Switch OFF to disconnect User Interface from the audio engine.

---

### MIDI Thru

When MIDI thru is turned on, MIDI messages received in MIDI input will be send out from MIDI output. This setting is required when connected device's local switch is turned off.

---

### MIDI Send

Enable / disable MIDI output.

---

### MIDI Monitor

Enable / disable MIDI key input monitoring.

---

### Musical Typing

Enable / disable computer keyboard to play MIDI notes.

---

### Pad Dark Mode

Enable / disable Keypad dark mode.

---

### Disable Sequencer

Enable / disable sequencer

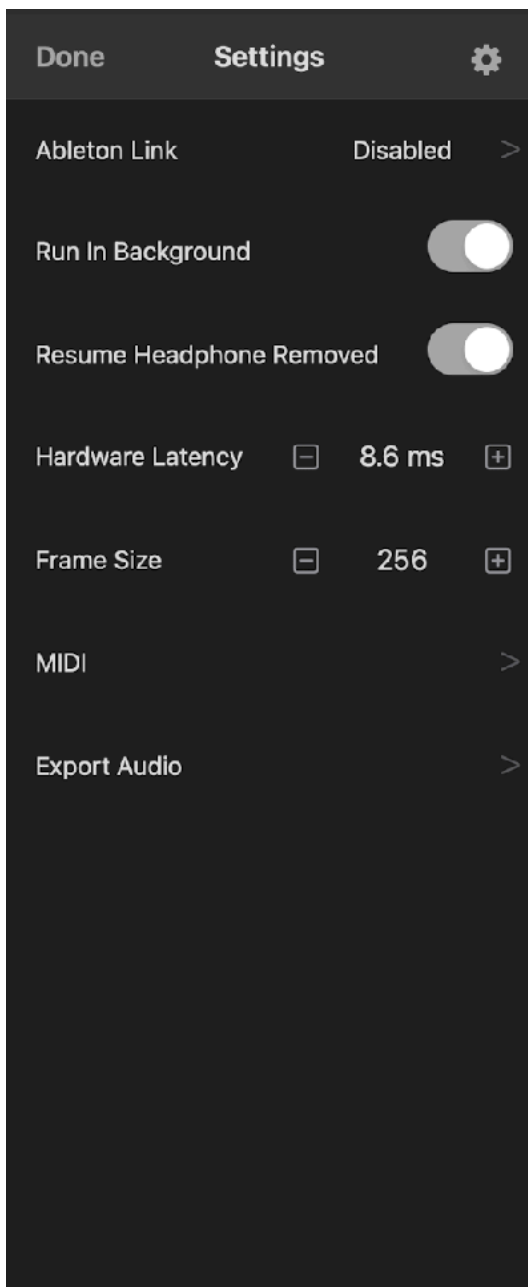
---

### Toggle Indicator/Slider

Toggle between indicator and slider in sub-title bar.

## Setting Panel (Stand Alone)

Select Show Setting Panel from setting menu to show the Setting Panel to edit settings for Stand Alone.



---

### Ableton Link

Open Ableton Link Settings.

---

### Run in Background

Turn this switch on to allow app to play continuously when the app enters in the background.

---

### Resume Headphone Removed

Turn this switch on to allow app to play continuously when headphone is disconnected.

---

### Hardware Latency

When Ableton Link is enabled, playback is synchronized to the Link-enabled devices. If there is a latency, output signal may not be aligned with the beginning of the each step.

In order to adjust the latency, set time in milliseconds in Hardware Latency. This value is used to compensate the latency of the output signal.

The latency varies on audio Interface and sample rate. Default value is 12.5 millisecond (sample rate is 44.1KHz)

---

### Frame Size

Frame Size (Buffer Size) is a number of samples contained in an audio buffer. Higher frame size increases system performance but increases latency. Lower frame size decrease latency but decreases system performance. If you experience a problem with system performance, set higher frame size to improve the performance. Default setting is 256.

---

### MIDI

Open MIDI settings.

---

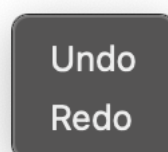
### Export Audio

Open export audio settings.

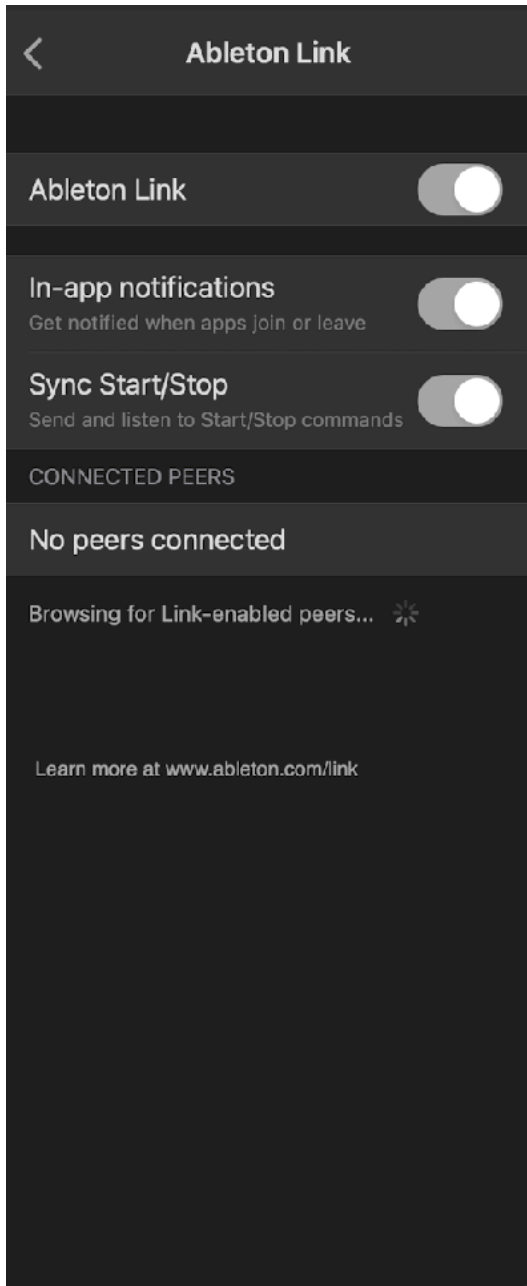
---

### Menu

Tap gear icon to show a menu.



# Ableton Link



Ableton Link is a new technology that synchronizes beat, phase and tempo of Ableton Live and Link-enabled iOS apps over a wireless network. It lets you play devices together with the freedom of a live band. Anyone can start and stop their part while others keep playing, and anyone can adjust the tempo and the rest will follow. You can use Link to play with several instances of Ableton Live, with Live and iOS apps, or even without Live in your setup: using Link-enabled apps on multiple devices, or multiple apps on the same device.

## **Ableton Link**

Switch on to enable Ableton Link.

## **In-app notification**

Switch on to displays a message when an Ableton Link enabled app is connected.

## **Sync Start/Stop**

Switch on to synchronize start and stop with connected apps.

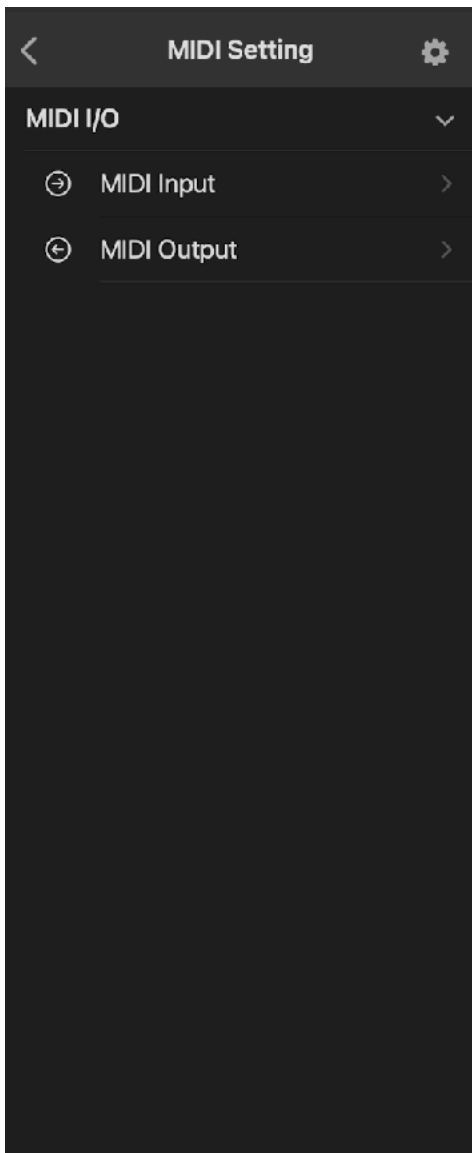
## **Connected Apps**

Indicate number of currently connected apps.

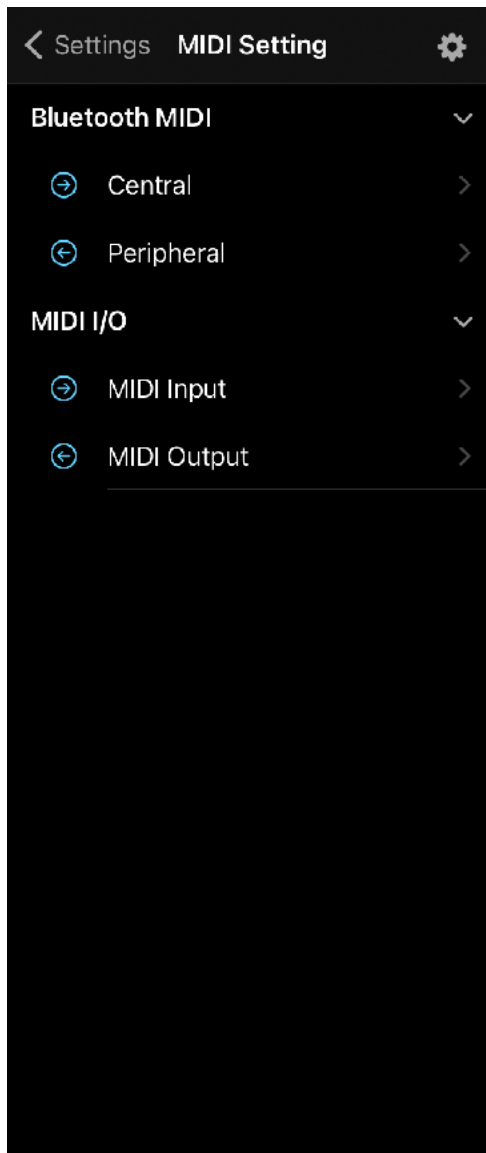
Ableton Link requires Wireless Local Network Connections. Your device and other Link-enabled devices must be connected to the same local network.

# MIDI Setting

## macOS



## iOS



---

### Bluetooth MIDI Central

Open Bluetooth MIDI Devices Page, which list available bluetooth devices. Select a name to connect to the device.

---

### Bluetooth MIDI Peripheral

Open Local MIDI Service Page. If Advertise MIDI Service switch is turned on, it makes the device to be discoverable from the other Bluetooth MIDI devices.

---

### MIDI Input

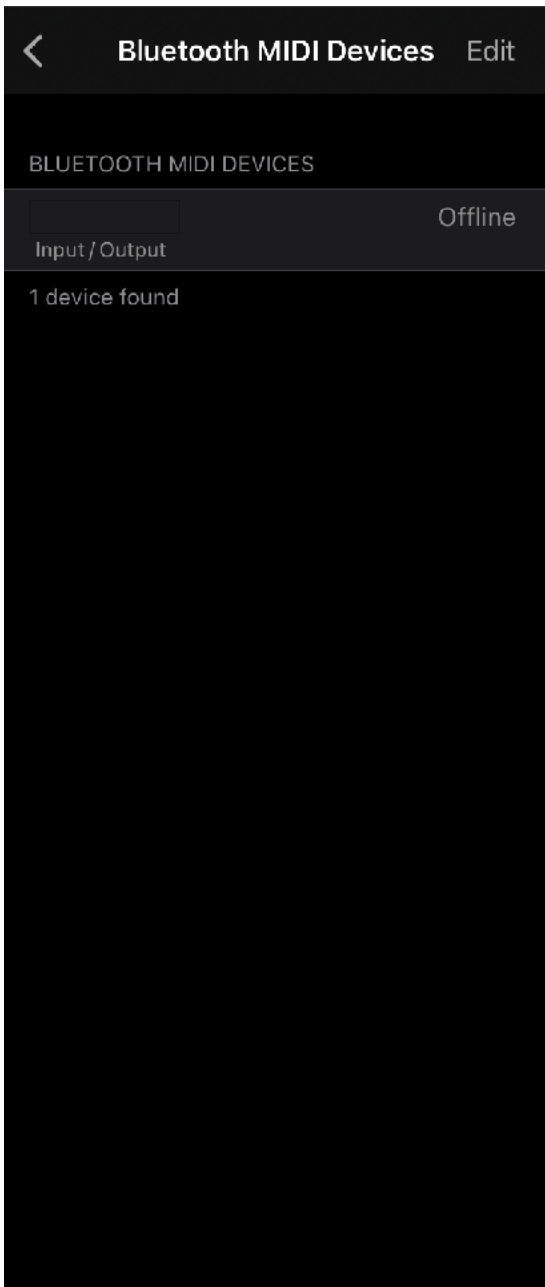
Open MIDI Input Page. This page shows a list of MIDI input services and devices. Tap on gear button to show MIDI Input Menu.

---

### MIDI Output

Open MIDI Output Page. This page shows a list of MIDI output services and devices. Tap on name to connect to the device. Tap on gear button to show MIDI Input Menu.

# Bluetooth MIDI Central



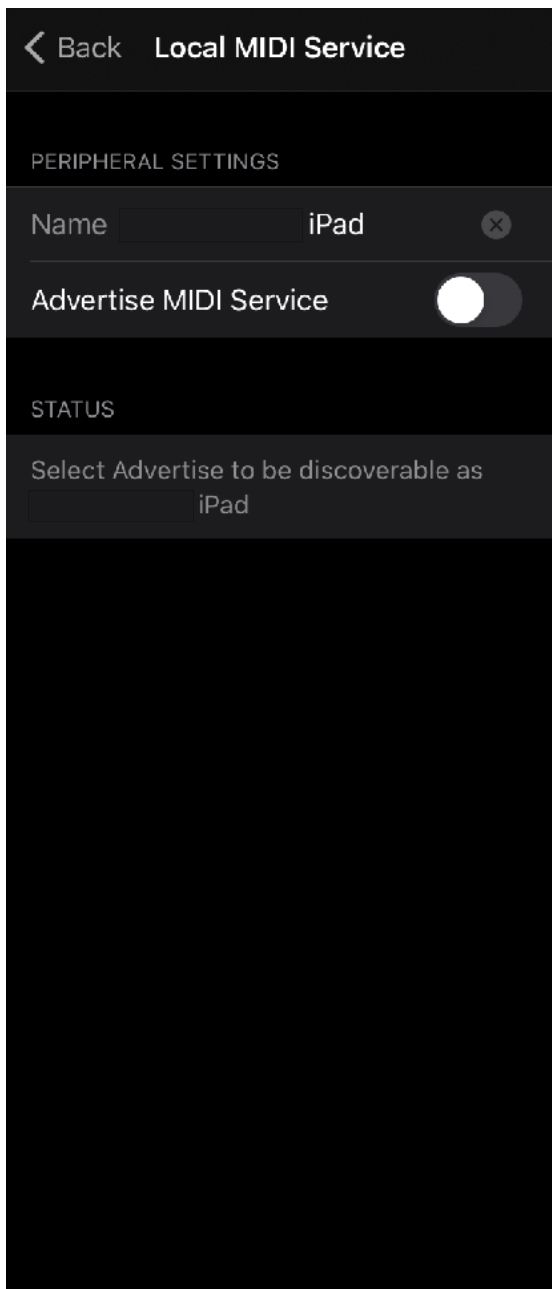
---

## Bluetooth MIDI Devices

Select a name to connect to the device.



# Bluetooth MIDI Peripheral



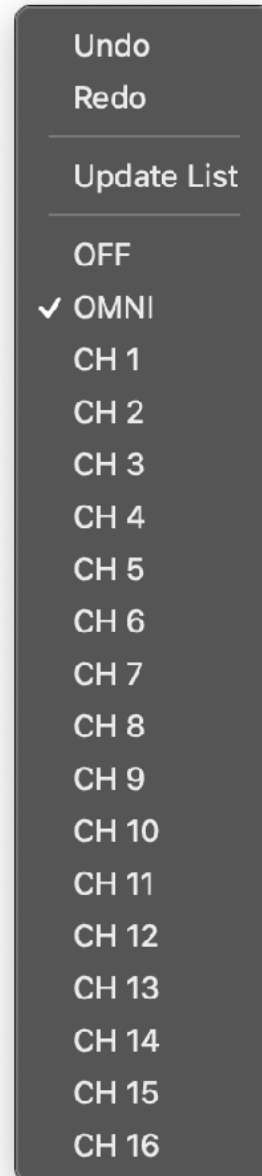
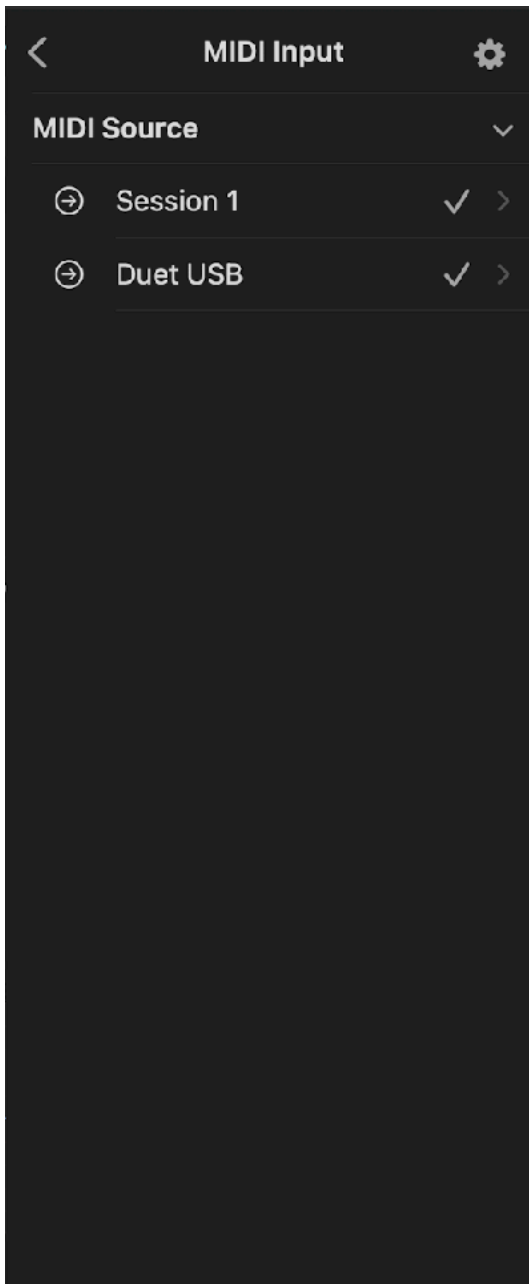
---

## Advertise MIDI Service

Turn on to make the device to be discoverable from the other Bluetooth MIDI devices.

## MIDI Input

This page shows a list of connected MIDI input sources. Select a name of the source to connect. Tap gear icon to show a menu.



---

### Update List

Select this menu to update MIDI input list.

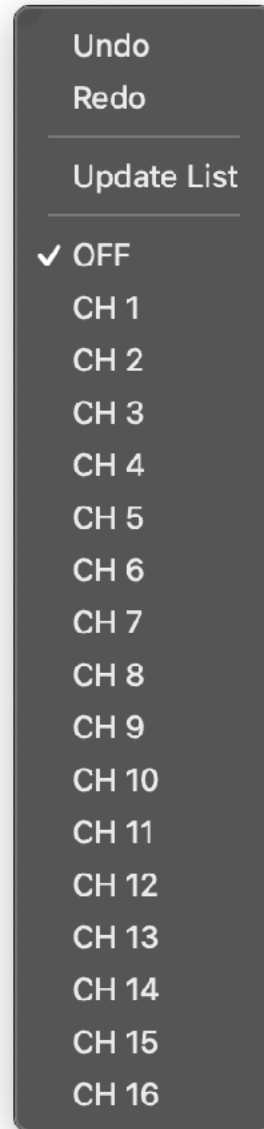
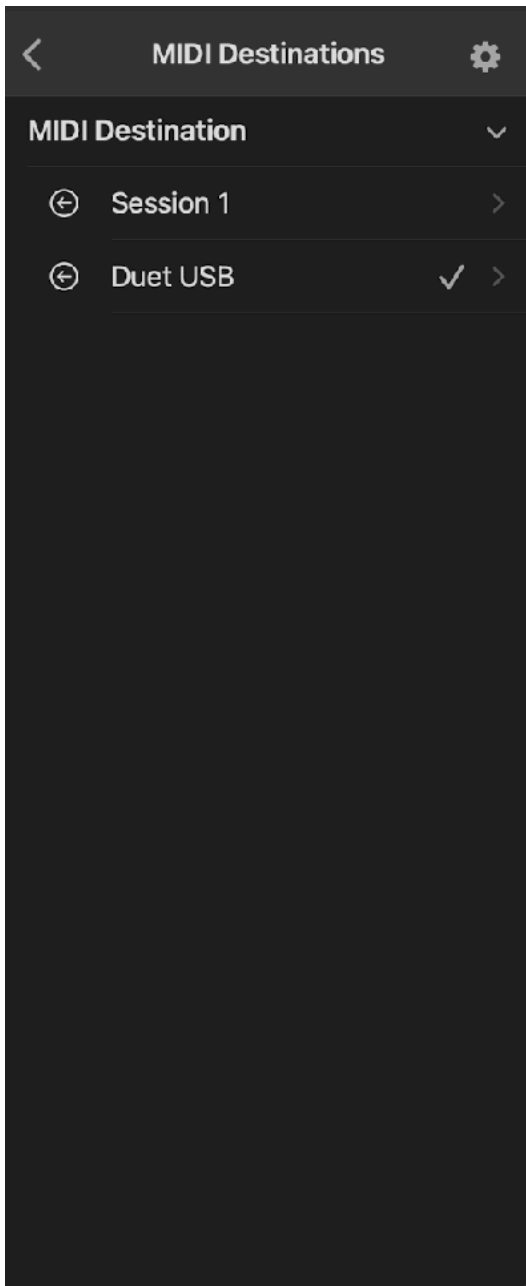
---

### MIDI Channel

Select MIDI Channel.  
Select OFF to disable MIDI input.  
Select OMNI to connect all channel.

# MIDI Output

This page shows a list of available MIDI output devices. Select a name of the device to connect. Tap gear icon to show a menu.



---

## Select MIDI Output Destination

Tap name of the device to connect MIDI output to the device. Selected device shows check mark on the right.

---

## MIDI Channel

Select MIDI Channel.  
Select OFF to disable MIDI output.

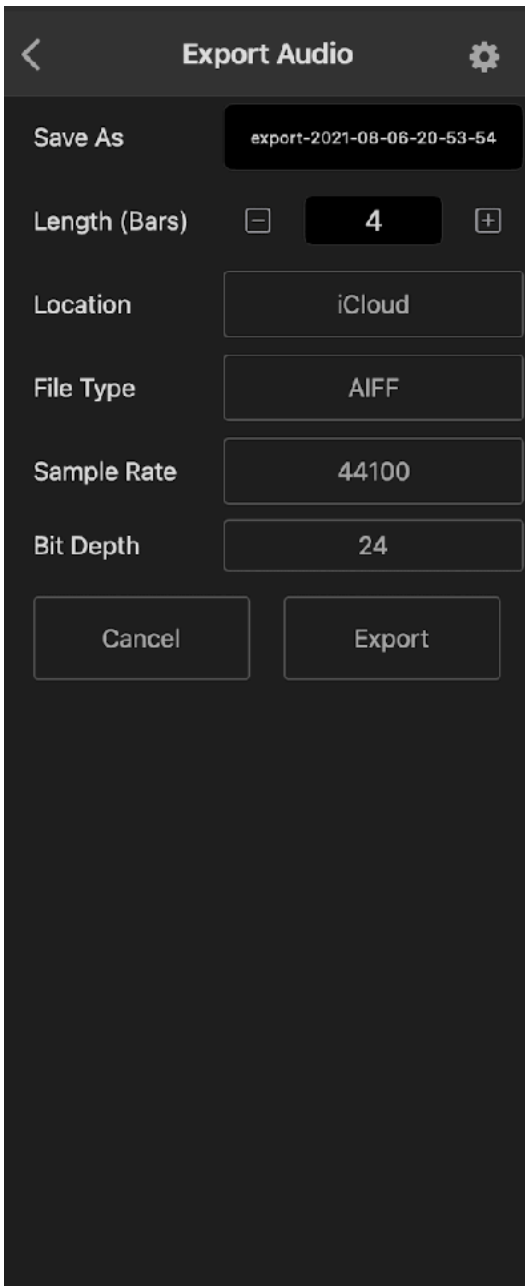
---

## Update List

Select this menu to update MIDI output list.

# Export Audio

Export audio file to iCloud drive or local drive.



---

## Save As

Specify name of the audio file to export.

---

## Length (Bars)

Length of the audio to be recorded. Specify the length by number of bars.

---

## Location

Select location for the audio file to be stored. Options are Local or iCloud.

---

## File Type

Select file type of the audio file. Options are AIFF, WAV, CAF and ACC.

---

## Sample Rate

Select a sample rate of the audio file. Options are 44.1KHz, 48KHz, 88.2KHz and 96KHz.

---

## Bit Depth

Specify bit depth of the audio file. Options are 16 bit, 24 bit and 32 bit.

---

## Export

Tap export to export audio file.

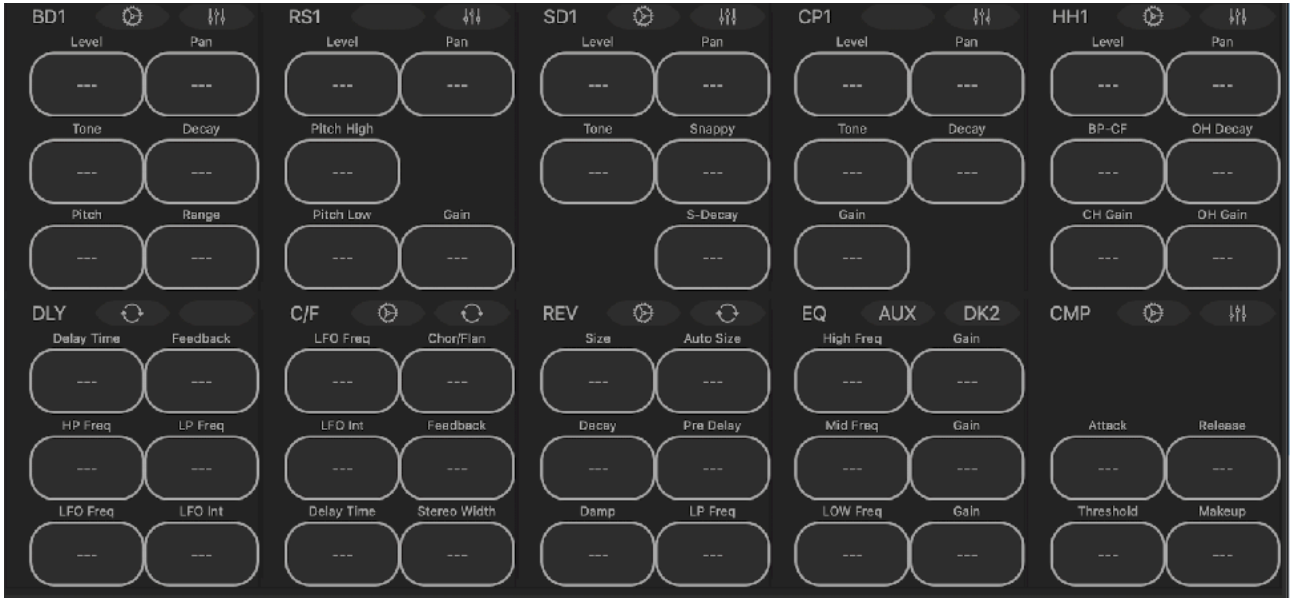
---

## Cancel

Tap cancel to return to the home page of the setting panel.

# MIDI CC Map

Select Show Map MIDI CC from setting menu to show MIDI CC Map View.  
Use synth button on tool bar to select synth or effect to map MIDI CC to the parameters.  
Select Hide Map MIDI CC from setting menu to close MIDI CC Map View.



To make a MIDI CC (Continuous Controller) assignment, Tap a button then turn a knob on MIDI controller. The first MIDI CC number detected will be assigned to the parameter.

When CC is assigned, the button shows the CC number. Alternatively, double tap on a button to type in CC number.

To cancel the assignment or to remove the mapping, tap the button.

## Override Automation

When a parameter is controlled by MIDI controller, it is not possible to automatically override automation. To override, turn off automation switch of the parameter or turn the dial of the parameter on screen that will stop the automation and the parameter can be controlled freely by MIDI controller.

## Program Change

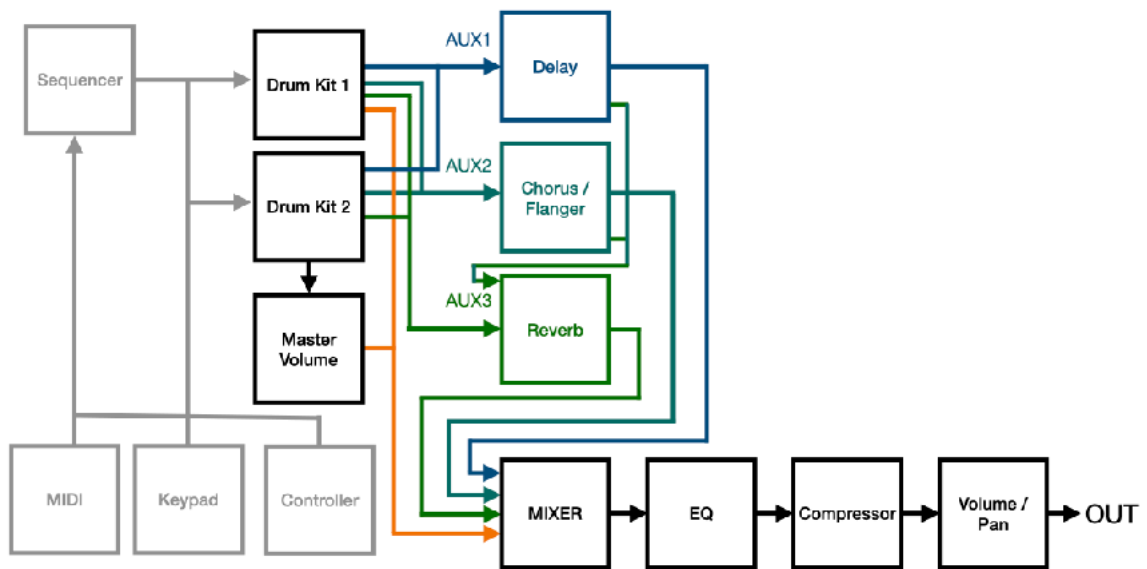
Program Change is received as following.

Factory: Bank (CC#0) = 0, Sub (CC#32) = 0, Program = Preset Number

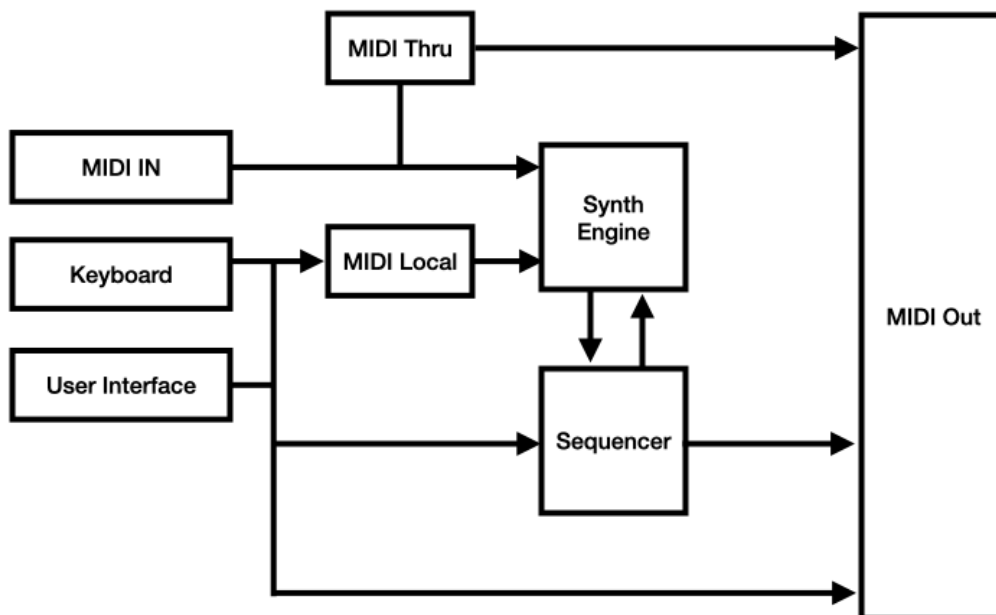
Plugin: Bank (CC#0) = 0, Sub (CC#32) = 1, Program = Preset Number

Presets stored in iCloud Drive can't be selected by the MIDI program change.

## Block diagram



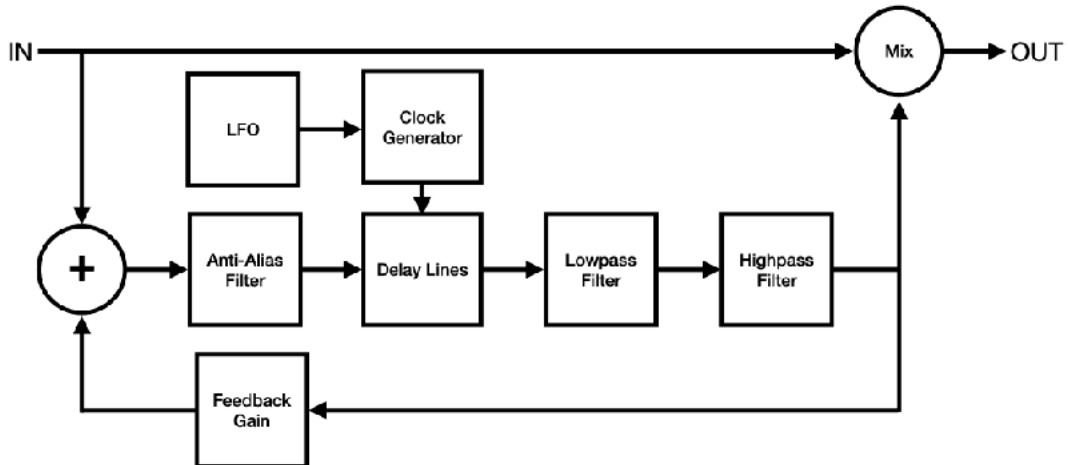
## Control Signal & MIDI Flow



# Effects

## Delay

### Signal Flow



### Delay Time

Adjust delay time from 20 ms to 1200 ms. When sync switch is turned on, delay time can be set as note value which is synchronized to the tempo. Valid range of the note value is automatically adjusted base on the current tempo.

### Regeneration

Adjust feedback from 0 % to 100 %. You can change sound of the feedback by adjusting frequency of the high-pass filter and the low-pass filter.

### Modulation

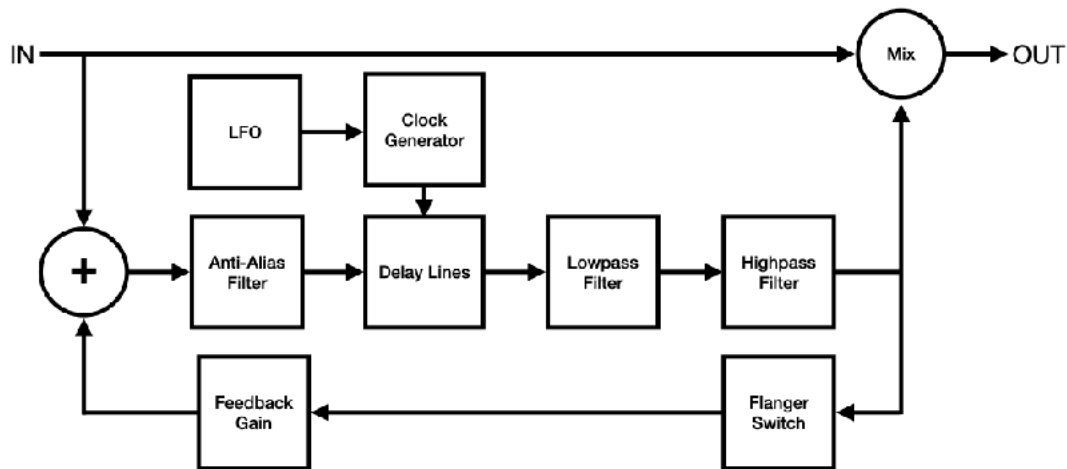
Modulation can be applied to the delayed signal. LFO (Low Frequency Oscillator) generates sine wave for the modulation.

Adjust LFO frequency from 0.01 Hz to 10 Hz.

Adjust LFO Intensity from 0 to 1.0, which adjust modulation width from 0 ms to +/- 10 ms.

# Chorus / Flanger

## Signal Flow



## Input Signal Level

Level of input signal should be about -6dB or less. If the input signal is too hot, it will cause distortion in output signal.

## Effect Type

Select effect type from chorus or flanger. Ranges of the delay time and the LFO Intensity change based on the selected effect type.

## Modulation Speed

LFO Frequency dial controls speed of the modulation. When sync switch is turned on, LFO Frequency can be set as note value which is synchronized to the tempo. Valid range of the note value is automatically adjusted based on the current tempo.

## Modulation Width

LFO Intensity dial controls width of the modulation and delay time dial controls center position of the modulation.

When chorus effect is selected, range of the LFO intensity is from 0 ms to 1 ms and range of the delay time is from 1 ms to 40 ms.

When flanger effect is selected, range of the LFO intensity is from 0 ms to 12 ms and range of the delay time is from 1 ms to 13 ms.

Rotate delay time dial counterclockwise to emphasize higher frequency or clockwise to emphasize lower frequency.<sup>1</sup>

## LFO Shape

LFO shape dial controls shape of the LFO waveform. When the dial is rotated fully counterclockwise, shape of the waveform is sine wave. When the dial is rotated fully clockwise, shape of the waveform is triangle wave.

## Stereo Width

Stereo Width dial controls phase offset of the LFO. When the dial is rotated fully counterclockwise, stereo width is 0%. (phase offset is 0 degree) When the dial is rotated fully clockwise, stereo width is 100%. (phase offset is 180 degree)

## Regeneration

Feedback dial controls amount of regeneration from 0 % to 100 %. Turning the feedback dial clockwise enhances amount of the feedback effect.

<sup>1</sup> If compared with manual knob of the analog flanger guitar pedal, emphasized frequency moves reverse direction.



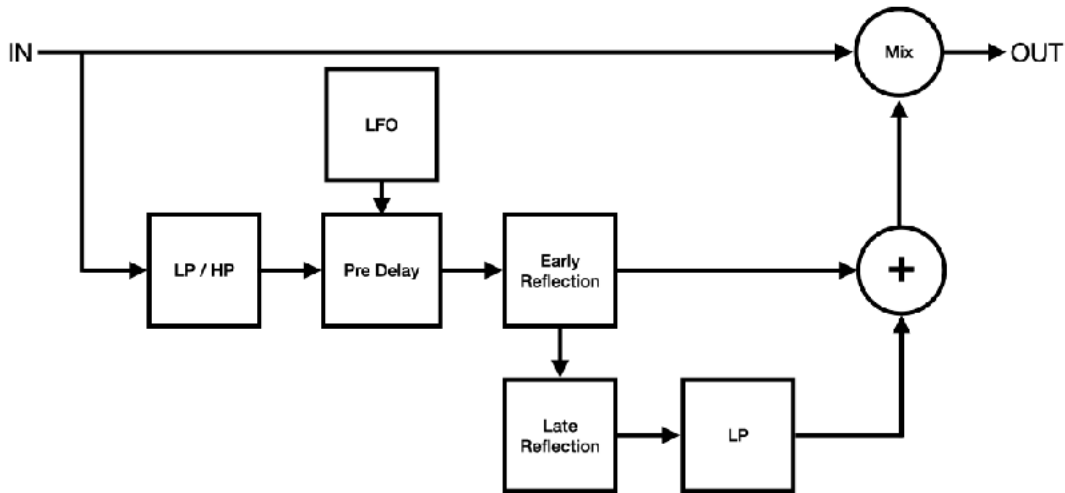
---

## Filters

Delayed signal is routed to high-pass filter and low-pass filter before mixed with dry signal. HP frequency controls frequency of the high-pass filter. LP frequency controls frequency of the low-pass filter.

# Reverb

## Signal Flow



### Input Filter

Use Lowpass filter and high-pass filter to attenuate high frequency and low frequency of the input signal.

### Pre Delay

Use pre delay to adjust amount of the time between the direct signal and beginning of the early reflection signal. This parameter can be used to express size of the space. Reflection takes short time to bounce back in small room and it takes long time in large room. Also this parameter can be used to separate dry signal and reverb signal in the mix.

### Modulation Speed

LFO Frequency dial controls speed of the modulation. When sync switch is turned on, LFO Frequency can be set as note value which is synchronized to the tempo. Valid range of the note value is automatically adjusted base on the current tempo.

### Modulation Width

LFO Intensity dial controls width of the modulation and pre delay time dial controls center position of the modulation. Range of the LFO intensity is from 0 ms to +/- 10 ms.

### Size and Decay

Size dial controls reverb time of late reflection and decay dial controls length of the reverb tail. Decay time can be used to express size of the space and material of the surface. Reflective materials, such as concrete or hardwood, gives longer decay time.

When auto size switch is turned on, size dial controls value of the parameters including size, pre delay, decay, damp, output LP frequency and early/late mix.

When sync switch is turned on in auto size mode, total reverb length, which can be controlled by pre delay, size and decay, is adjusted by note value which is synchronized to the tempo.

### Damping

Damp dial controls amount of high frequency absorption for the late reflection signal. Low damping values produce brighter reverb sound and high damping values produces darker reverb sound.

### Output Filter

Use lowpass filter to cut high frequency of the reverb signal.

---

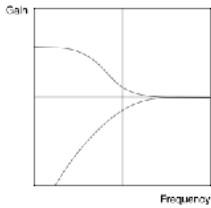
## Early / Late Mix

Adjust balance of the early reflection signal and late reflection signal from 0% (early reflection ) to 100% (late reflection).

# Equalizer

---

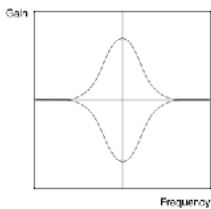
## Low Shelving



Adjust frequency of the filter from 21 Hz to 1092 Hz.  
Adjust gain from minus infinity to +12 dB  
When gain is turned fully anti clock wise, the filer becomes high pass filter.

---

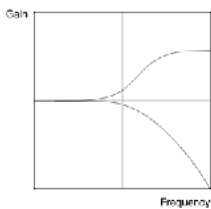
## Mid Peak / Notch



Adjust frequency of the filter from 151 Hz to 2389 Hz.  
Adjust gain from -14 dB to +14 dB  
Bandwidth is fixed to one octave.

---

## High Shelving

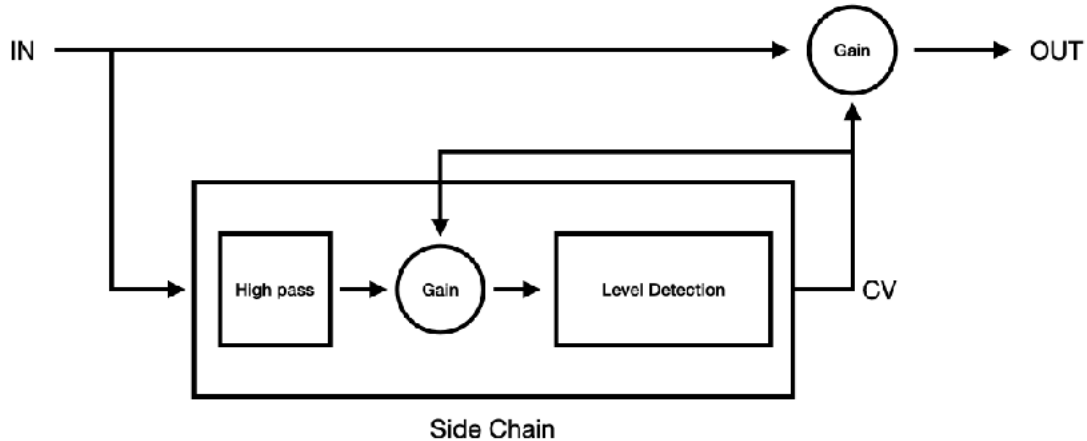


Adjust frequency of the filter from 296 Hz to 21096 Hz.  
Adjust gain from minus infinity to +12 dB  
When gain is turned fully anti clock wise, the filer becomes low pass filter.

# Compressor

## Overview

The compressor reduces dynamic range of audio signal. This is achieved by feedback topology as shown in the diagram below.

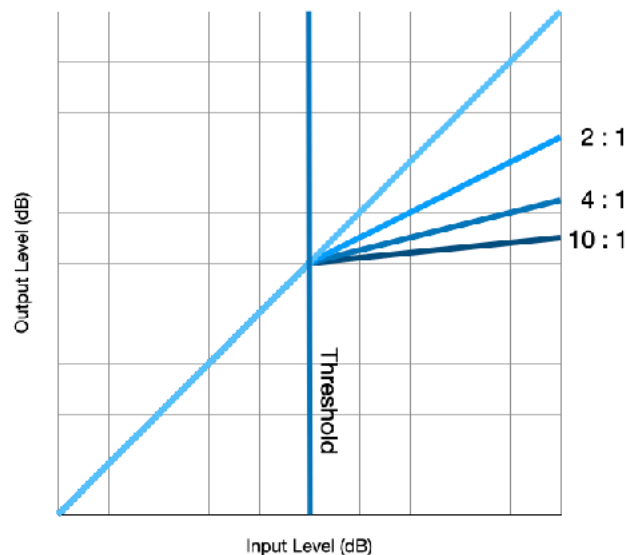


High pass filter is applied to the input of the side chain and the signal is routed to the gain stage in the side chain. The output of the gain stage is routed to the level detection. The level detector detects level of the input signal and generates control signal based on the level of the gain reduction required. The control signal is routed to the amplifier in the gain stage in the side chain to adjust level of the input signal from the high pass filter. The same control signal is also routed to the amplifier of the main gain stage to adjust level of the input signal.

The feedback topology is common in early analog compressors. Although there are several disadvantages to this topology, it is considered more musical than feed-forward design used in modern compressors. The feedback loop is implemented without unit delay to emulate behavior of the analog circuit.

## Threshold and Ratio

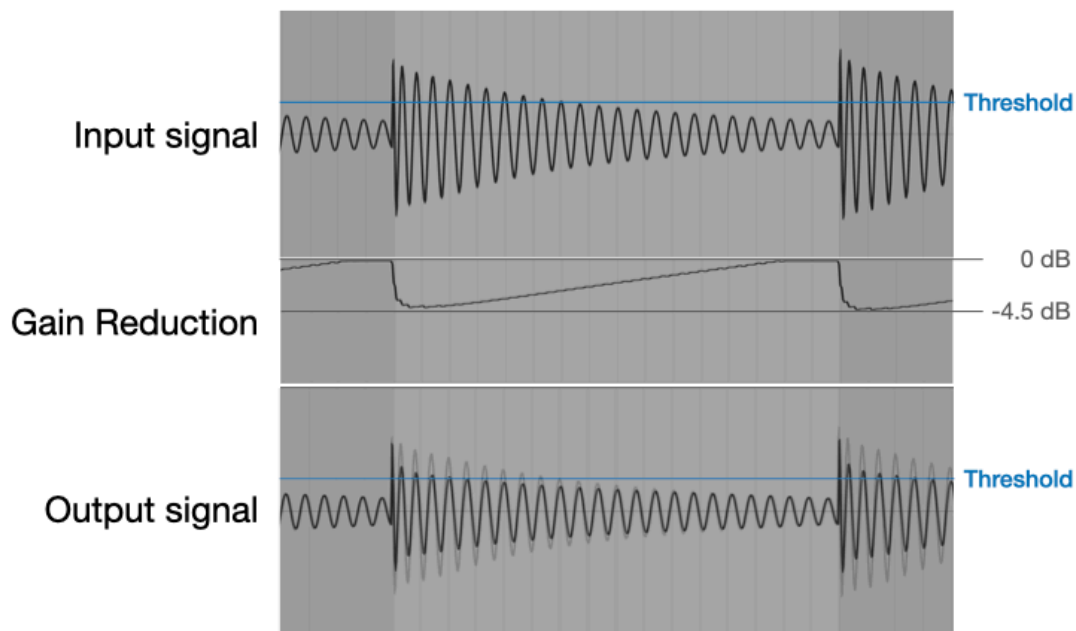
When level of the input signal passes above the threshold, the input signal is compressed by the ratio.



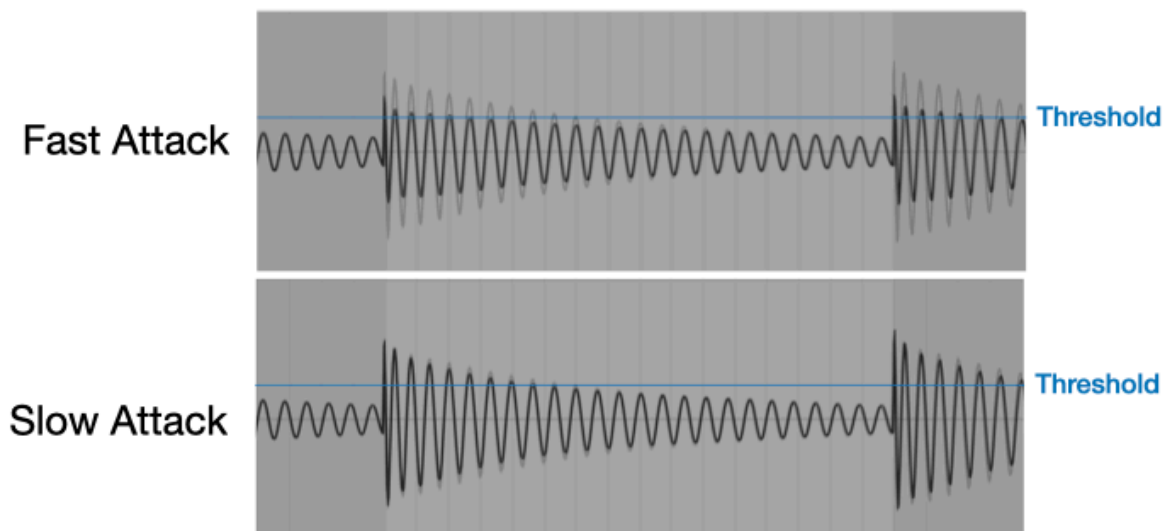
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## Attack and Release

Attack is the time it takes for the signal to be compressed by the given ratio. Release is the time it takes the gain reduction to return to zero.

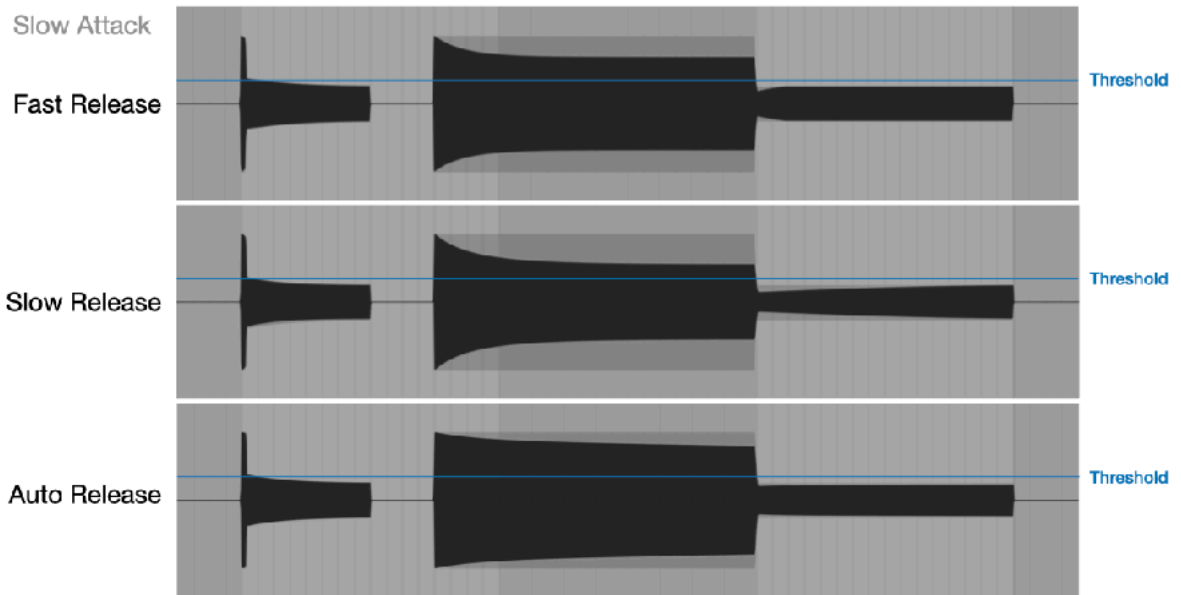
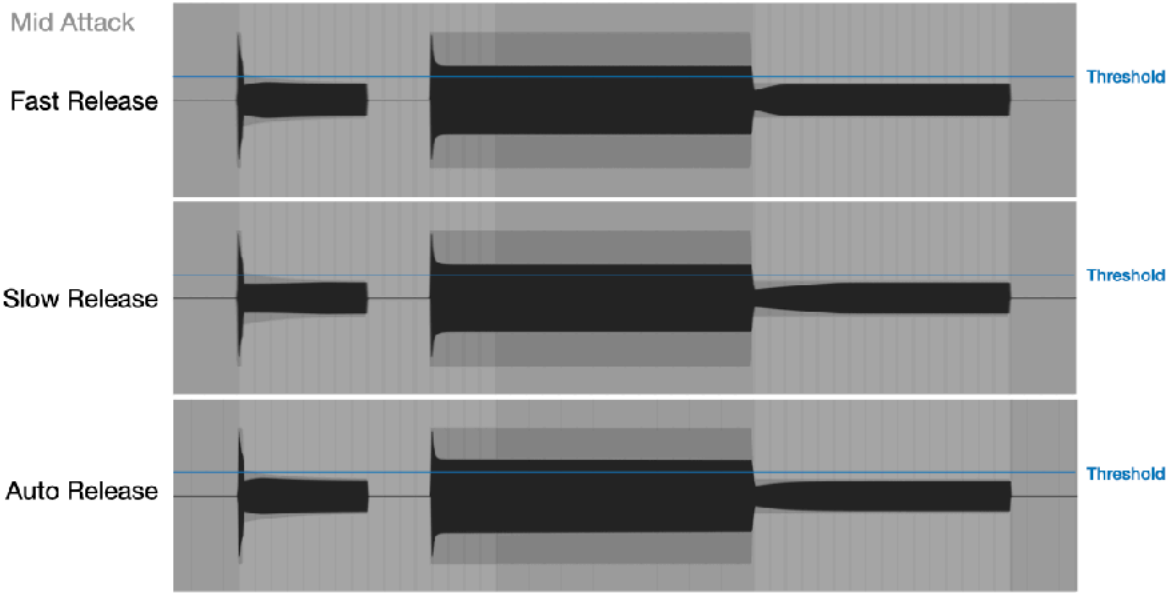
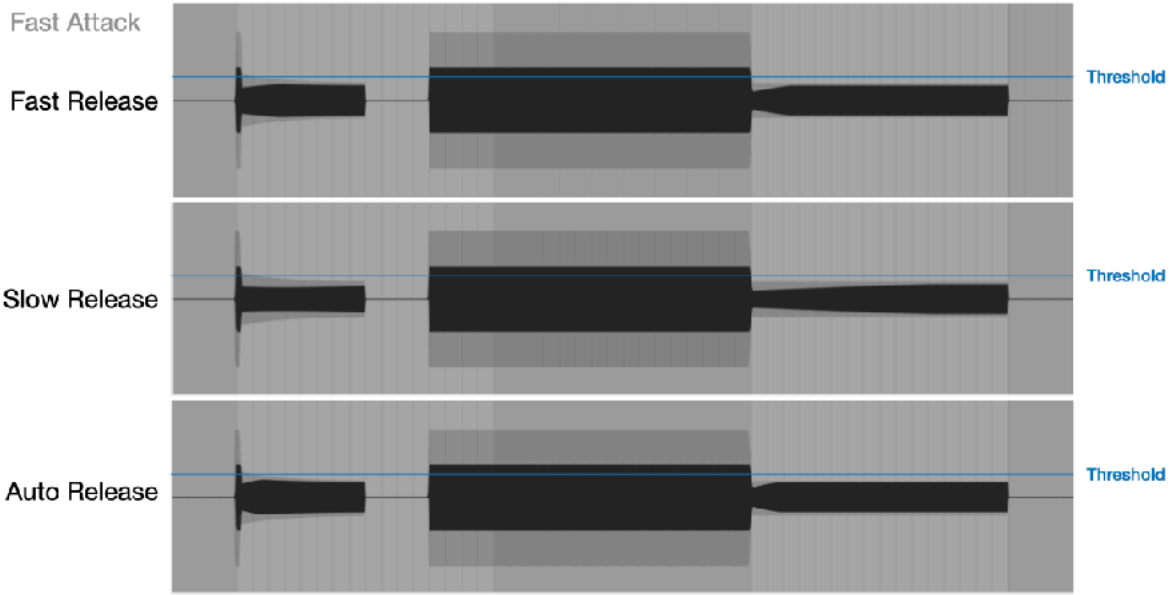


In this example, attack is 1 ms and release is 0.6 s. The initial transient pass through the compressor without gain reduction. It takes a while for the gain reduction to return to 0 dB after the input signal goes below the threshold.



Fast attack makes compressor to start gain reduction immediately after the input signal passes above the threshold. Slow attack, on the other hand, allows many of the transients to pass through compressor without gain reduction.

The figures below illustrate characteristic of the attack and the release. 1KHz Sine wave is used as an input signal (shown as transparent background images). It shows how compressor reacts with various combination of the attack and release settings.



Auto Release uses two time constants for the peak detector. It will react differently for the short transients and the long sustained sound.

Fast attack reduces the level of the transients and make sound soft, slow attack allows transients to pass through and gives a punch to the sound.

Fast release causes pumping and breathing effects. Slow release continues to reduce level for a long period of time after compressing louder part of the sound.

---

## Side Chain High Pass Filter

-6 dB / octave high pass filter is applied to the input signal of the side chain. Frequency range is from 20 Hz to 185 Hz. This filter removes low frequency information from the input signal for the level detector to control excessive gain reduction and pumping effect.

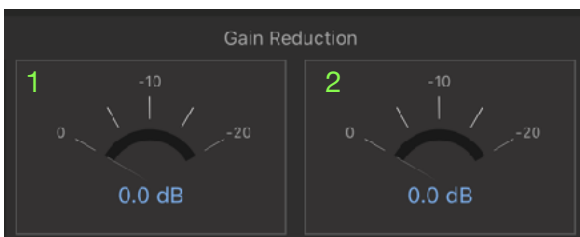
---

## Makeup Gain

Use Makeup to compensate the gain reduced by the compressor. The range is from 0 dB to 20 dB. Gain reduction meters show the amount of the gain reduction. You can used the information to adjust level of the makeup gain.

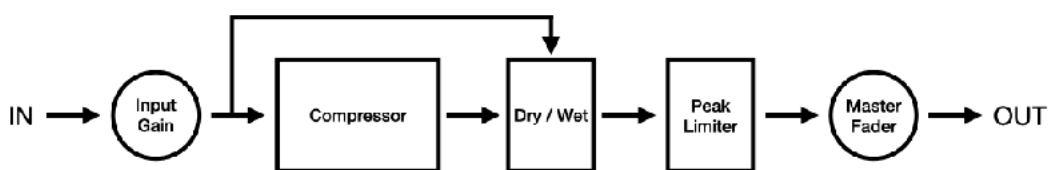
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## Gain Reduction Meter



Gain reduction meters shows peak level of the gain reductions in dB.

1. Gain reduction for the left channel
2. Gain reduction for the right channel



---

## Input Gain

Adjust gain of the input signal routed to the compressor. The range is from -20 dB to 20 dB. When level of input signal is increased, GR meters show gain reductions even if threshold is set to 0 dB.

---

## Dry / Wet

Use Dry / Wet to mix uncompressed signal (dry) and compressed signal (wet). Parallel compression technique, also known as New York compression can be achieved by adjusting amount of the wet signal mixed with the dry signal. When set to 0%, output is the dry signal. When set to 100%, output is the wet signal. When set to 50%, equal amount of the dry and the wet signal are mixed for the output.

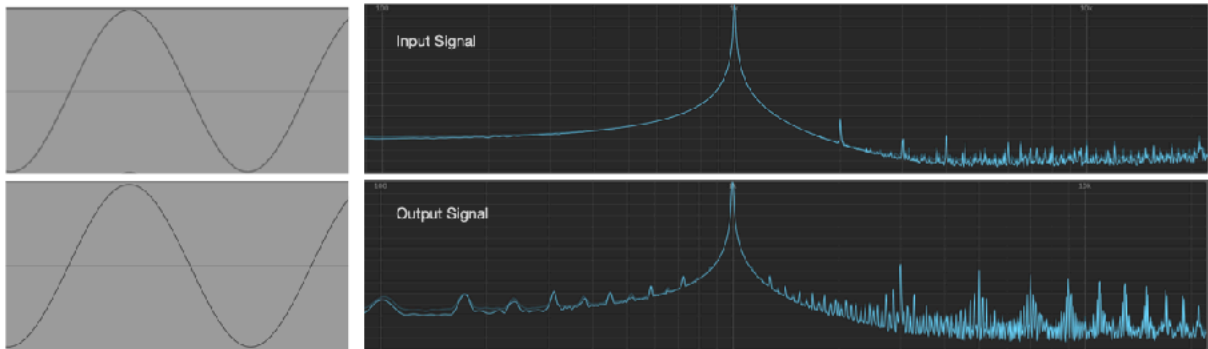


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## Peak Limiter

Peak Limiter is an analog style limiter and provides clean sounding output signal. This limiter is not a lookahead brick wall limiter, so that it can't offer brick wall limiting. However it does not introduced any latency to the output signal.

Frequency response of the peak limiter is illustrated in the figure below. Output signal shows the result of 1 dB gain reduction.



# macOS

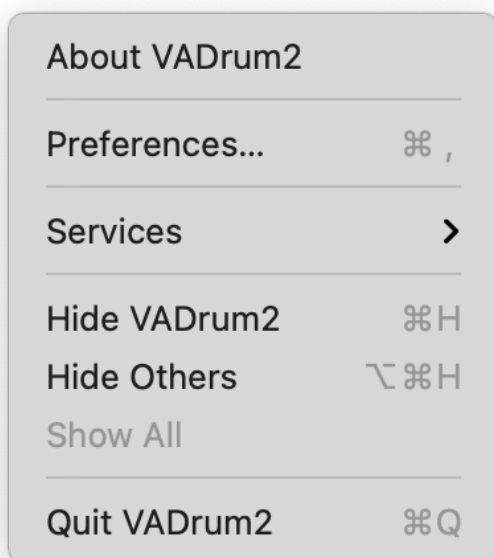
Stand Alone on macOS supports menu bar, keyboard shortcuts, context menu and touch bar. AUv3 plug-in on macOS supports keyboard shortcuts and context menu.

## Menu Bar



---

## Application



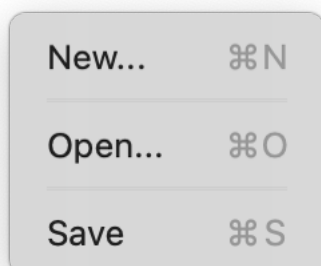
Open a window to display version information.

Open Preference window.

Quit this application.

---

## File



Reset all parameters and sequence data.

Open a preset from iCloud drive.

Save a preset to iCloud drive.

---

## Edit

Undo	⌘ Z
Redo	⇧ ⌘ Z
<hr/>	
Cut	⌘ X
Copy	⌘ C
Paste	⌘ V
Paste and Match Style	⇧ ⌘ V
Delete	
Select All	⌘ A
<hr/>	
Start Dictation...	
Emoji & Symbols	⌘ Space

Edit Commands are enabled when typing text to specify file name.

---

## View

Show Keyboard	⇧ ⌘ K
Show Piano Roll	⇧ ⌘ P
Show Automation	⇧ ⌘ A
Show Synth	⇧ ⌘ S
Show Clips	⇧ ⌘ C
Show MIDI CC Map	⇧ ⌘ M
<hr/>	
Enter Full Screen	⌘ F

Show/Hide Commands are enabled/disabled based on the current view mode.

---

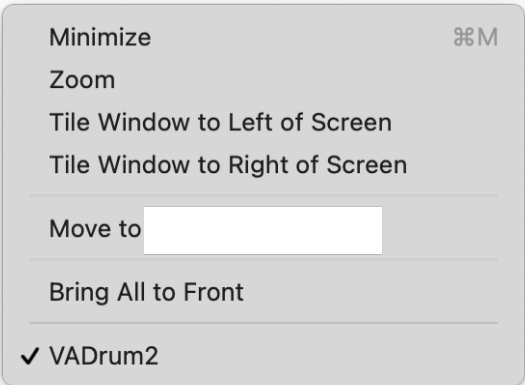
## Export

Export Audio	⇧ ⌘ E
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Open Export Audio Page in Setting Panel.

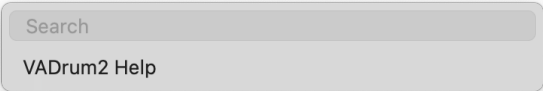
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# Window

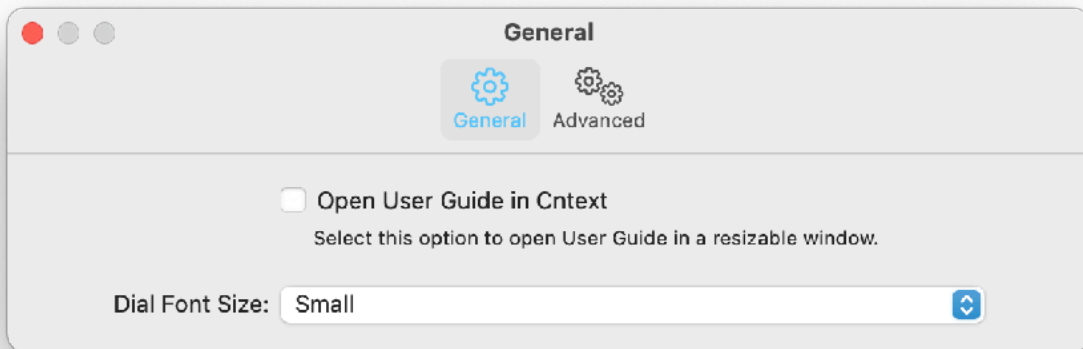


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# Help



# Preference



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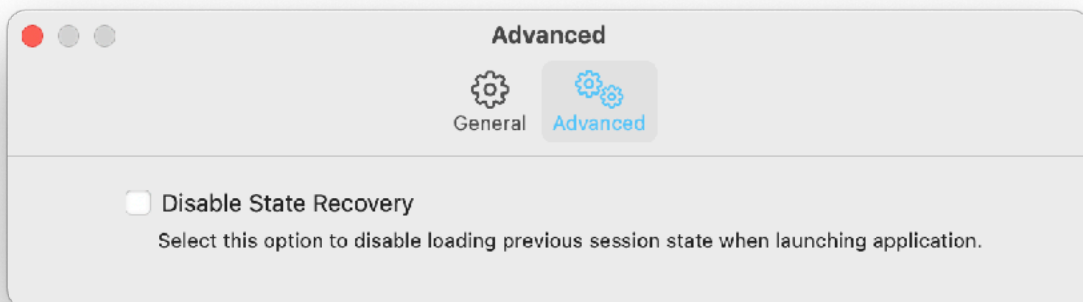
## Open User Guide in Context

Enable this option to open User Guide in Application Window so that you can resize the window. When this option is disabled, User Guide is displayed on Application Window with fixed size.

---

## Dial Font Size

Adjust font size of title label of the dials in Synthesizer View. Because font size is automatically adjusted based on the size of window. If the window is small, selecting Large Font Size may not show visual difference.



---

## Disable State Recovery

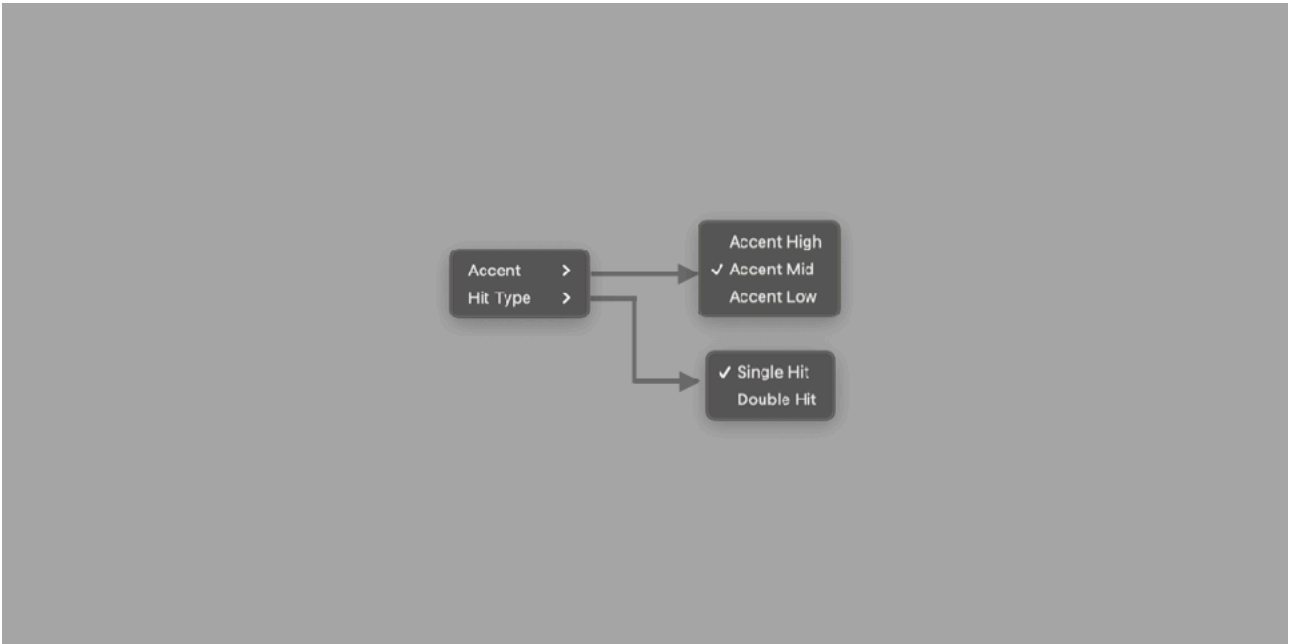
When application is launched, state of the previous session is automatically loaded by default. Check this option to disable state recovery, so the application always start in default state.

## Context Menu

Right Mouse Click or Command-Click to show context menus. Context menu contains all commands for the view.

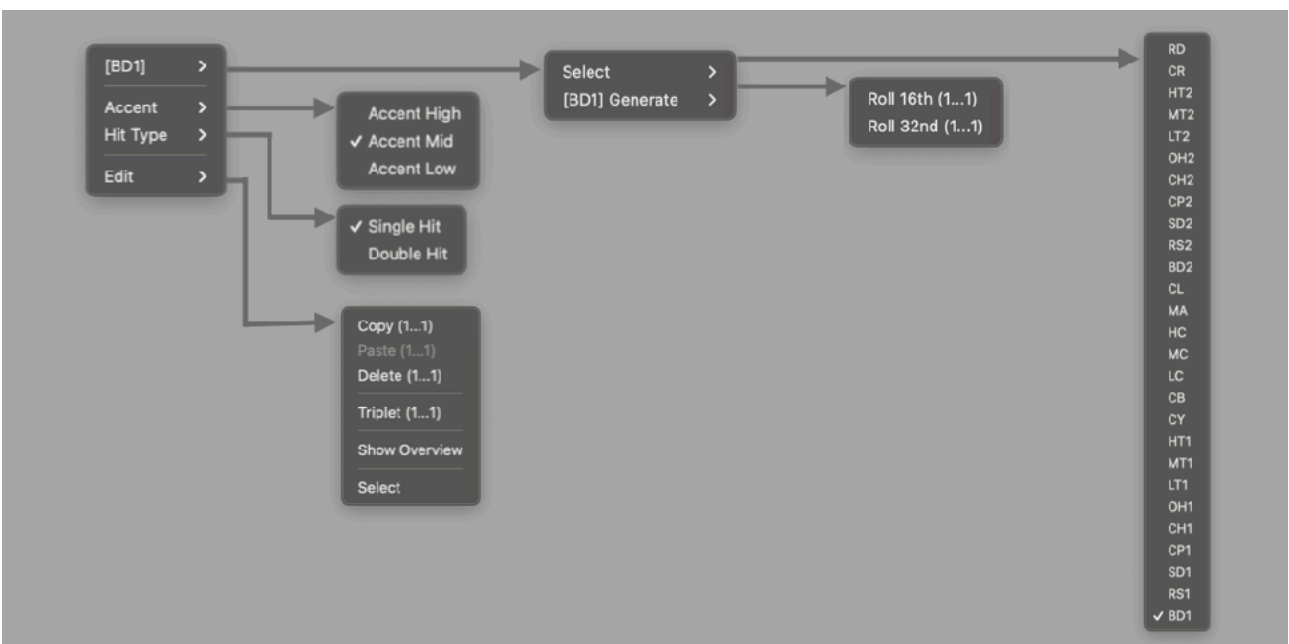
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### Keypad Context Menu



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### Piano Roll Editor Context Menu



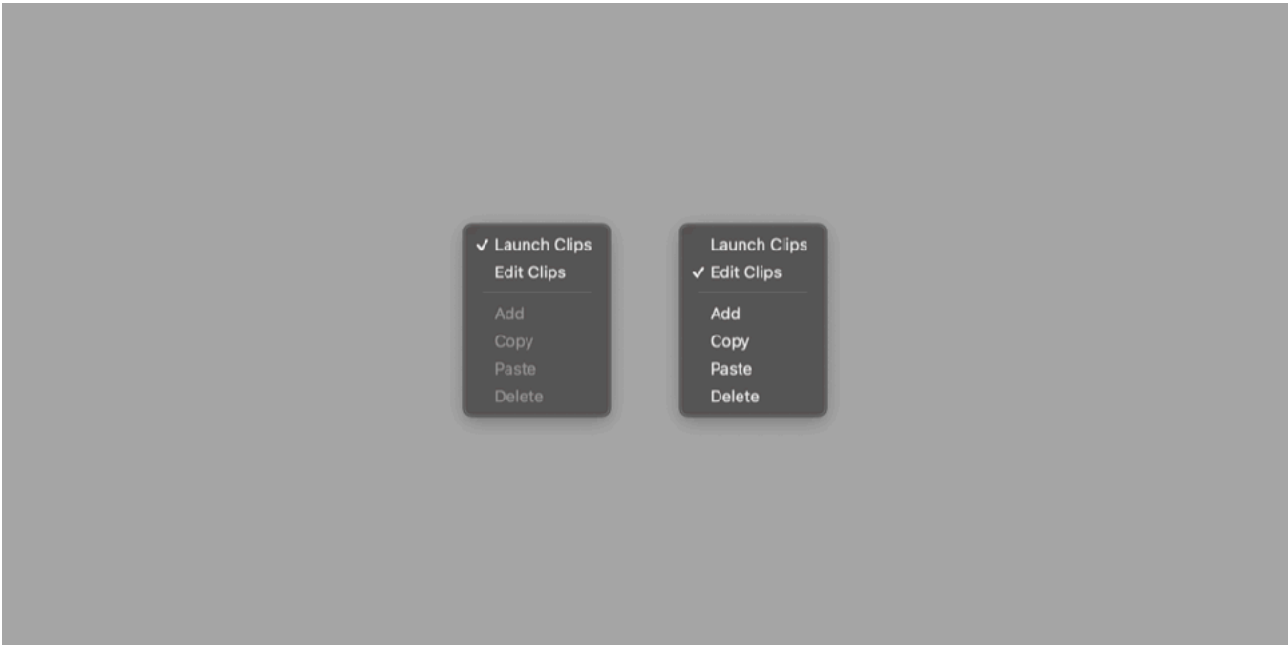
---

## Automation Editor Context Menu

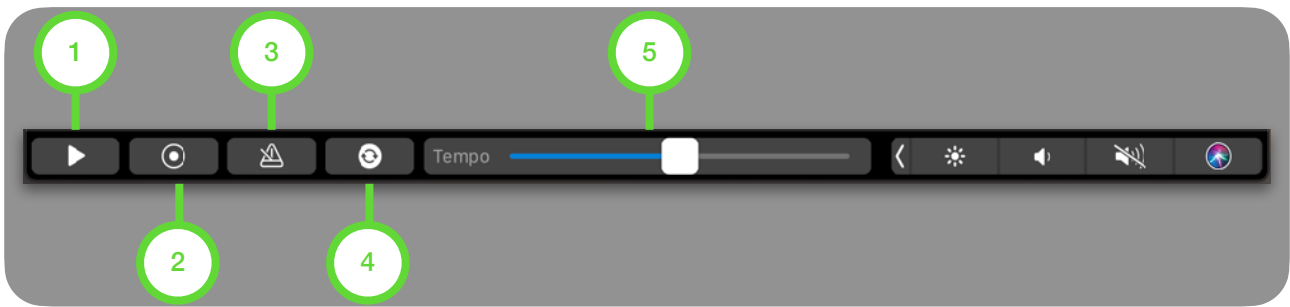


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## Clip Editor Context Menu



## Touch Bar (MacBook Pro)



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### 1. Play / Stop

Tap to play / stop sequencer

---

### 2. Record

Tap to enable / disable recording mode.

---

### 3. Metronome

Tap to enable / disable metronome.

---

### 4. Sync

Tap to enable / disable host sync.

---

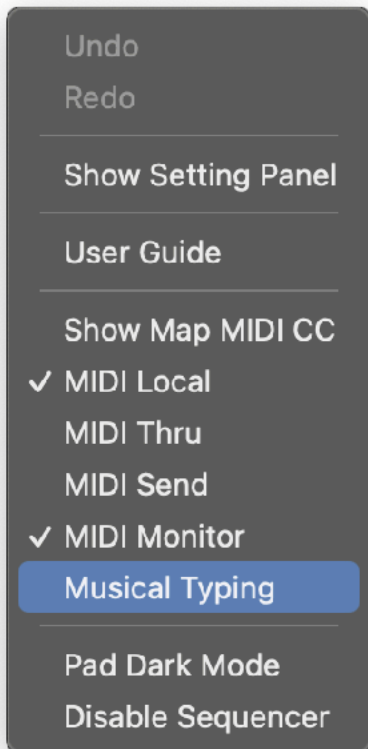
### 5. Tempo

Adjust tempo. Range of the slider is from 80 BPM to 160 BPM.

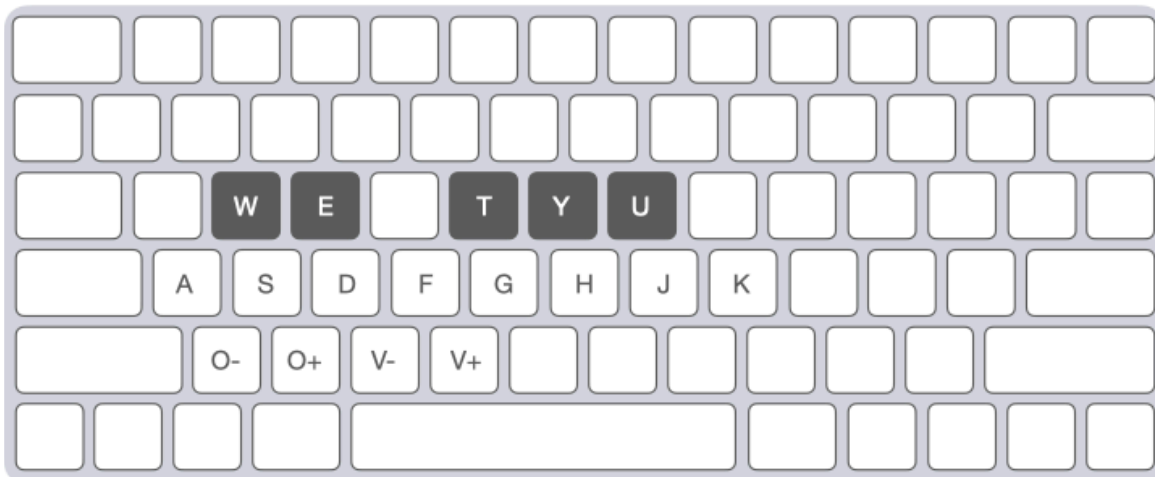


# Use Computer Keyboard as MIDI Keyboard

Enable Musical Typing option from setting menu.



Keys are mapped as shown in the figure below.



## Change Octave

[O-] Press Z key to select one octave below.  
[O+] Press X key to select one octave above.

## Change Velocity

[V-] Press C key to decrease velocity.  
[V+] Press V key to increase velocity.

## Keyboard Shortcut

Command	Key	AUv3	Note
New	Command-N	N/A	
Open	Command-O	N/A	
Save	Command-S	N/A	
Undo	Command-Z	✓	
Redo	Shift-Command-Z	✓	
Cut	Command-X	✓	Available for Text Input
Copy	Command-C	?	
Paste	Command-V	?	
Delete	Command-Delete	?	
Show/Hide Keyboard	Option-Shift-Command-K	?	
Show/Hide Pianoroll	Option-Shift-Command-P	?	
Show/Hide Automation	Option-Shift-Command-A	?	
Show/Hide Synth	Option-Shift-Command-S	?	
Show/Hide Clips	Option-Shift-Command-C	?	
Show/Hide MIDI CC Map	Option-Shift-Command-M	?	
Enter/Exit Full Screen	Control-Command-F	N/A	
Play/Stop	Space	?	
Record	Option-Shift-Command-R	?	
Change Focus	Tab	?	
List Up	Arrow-Up	?	
List Down	Arrow-Down	?	
List Select	Enter	?	

? : (AUv3) Availability is depends on the host application, which can disable these functions.

# AUv3 on Apple Garage Band

## Activate Plug-In

After loading VADrum2 or opening a project file, DSP engine of VADrum2 may not be running.

In order to start the DSP engine, please do one of the followings.

- Press Play button on GarageBand
- Play MIDI notes from GarageBand

## Offline Renering

Start Offline Rendering on Apple Garage Band  
Share > Export Song to Disk

The followings are a few tips for offline rendering on Apple Garage Band.

- Make sure to save your project before performing offline rendering.
- Audition before initiate offline rendering. In order to perform offline rendering, DSP engine of VADrum2 needs to be running. Please press play on GarageBand and make sure that DSP engine is running.
- If you are using clips, add an empty clip at the end and set the length to INF. Garage Band will stop rendering when audio level is dropped to inaudible level. This also helps to record tail of the delay or reverb effect.

## Known Issues

- DSP Engine doesn't start until a user presses play button or play MIDI notes on GarageBand.
- Touch Bar shows blanc screen when showing button menu or context menu.
- GarageBand doesn't record MIDI notes from keypads or sequencer of the VADrum2 plugin.

# System Interruptions (iOS)

It is important to aware that system may interrupt playback in the following situations. Please make sure to test and make a plan to handle the situations.

## 1. Incoming calls or activating Siri

When receiving an incoming call or when activating Siri, it interrupts playback and send App to background. In order to avoid it occurs, turn off the followings in the Setting App.

- Do Not Disturb > Do Not Disturb > turn on.
- Siri & Search > Listen for “Hey Siri” > turn off.
- Siri & Search > Press Home for “Siri” > turn off.

## 2. Connecting or disconnecting a headphone

Headphone output has own DAC<sup>2</sup> and own sample rate. The sample rate may be different form the sample rate of the audio engine. What will happens when connecting or disconnecting a headphone depends on the sample rates.

If the sample rates are same, playback continues when headphone is connected. When headphone is unplugged, playback will stop. You can change this behavior by turn Resume when headphone is unplugged on in Settings.

If sample rates are different, when connecting headphone or when disconnecting headphone stops playback and system will re-configure audio engine for the new sample rate.

The sample rate of the audio engine is set by an application or an audio interface. For example, when connecting an iOS device to Mac using a cable that came with your device, Inter Device Audio and MIDI on macOS uses 44.1KHz but Quicktime player app on macOS uses 48KHz.

If you are planning to connecting or disconnecting headphone for monitoring during playback, please make sure to test and learn what will occurs.

## 3. Changing sample rate setting

As described above, if sample rate of the audio engine is changed for any reasons, playback stops.

## 4. Media Reset

Under rare circumstances, the system terminates and restarts its media services daemon. When it occurs playback stops.

## 5. Pressing the Home button or sending App to background

When app is sent to background by pressing home button, showing notification center or any other reasons, playback stops. You can change this behavior by turn Run in Background on in Settings.

## Additional Settings

Followings are other settings in the Settings App which you may want to adjusted.

- Display & Brightness > Auto-Lock > set to Never
- Sounds > turn off all system sound
- Notifications > Show Previews > set to Never
- Home Screen & Dock > Multitasking > Gestures > turn off

If you have installed apps that may send you a notifications or may interrupt playback, make sure to adjust settings of the apps to disable the functions.

If you are using Ableton Link, make sure that Local Network in Privacy is turned on. If you are using Bluetooth MIDI, make sure that Bluetooth in Privacy is turned on.

---

<sup>2</sup> Digital to Analog Converter

# Keypad MIDI Mapping

Voice	Note (Middle C = C3)	Note (Middle C = C4)	MIDI Note Number
BD1	C1	C2	36
RS1	C#1/Db1	C#2/Db2	37
SD1	D1	D2	38
CP1	D#1/Eb1	D#2/Eb2	39
CH1	E1	E2	40
OH1	F1	F2	41
LT1	F#1/Gb1	F#2/Gb2	42
MT1	G1	G2	43
HT1	G#1/Ab2	G#2/Ab2	44
CY	A1	A2	45
CB	A#1/Bb1	A#2/Bb2	46
LC	B1	B2	47
MC	C2	C3	48
HC	C#2/Db2	C#3/Db3	49
MA	D2	D3	50
CL	D#2/Eb2	D#3/Eb3	51
BD2	E2	E3	52
RS2	F2	F3	53
SD2	F#2/Gb2	F#3/Gb3	54
CP2	G2	G3	55
CH2	G#2/Ab2	G#3/Ab3	56
OH2	A2	A3	57
LT2	A#2/Bb2	A#3/Bb3	58
MT2	B2	B3	59
HT2	C3	C4	60
CR	C#3/Db3	C#4/Db4	61
RD	D3	D4	62

# Specification

## Drum Synthesizer

23 virtual analog drum synthesizer  
4 sample playback drum synthesizer

## Sequencer

Loop Length: from 1 bar to 16 bars  
Clip: 16 clips  
Tempo: from 20 BPM to 999 BPM  
Host Sync: On and Off

## Effects

Delay, Chorus, Flanger, Reverb, EQ and Compressor

\*Appearance and specification of products are subject to change without notice.

# Release Notes

## What's new in version 1.0

- Initial release

## What's new in version 1.0.1

Version 1.0.1 contains improvements and bug fixes.

- Support iOS 15 / iPadOS 15

## What's new in version 1.0.2

- Fix problems which make AUv3 to fail the test of AudioUnit Validation Tool on macOS.
- Update Ableton Link Framework to the latest version.

## What's new in version 1.0.3

- Support iOS 16 / iPadOS 16

## What's new in version 1.0.4

- Added Spectrum Analyzer, Spectrogram and Oscilloscope.
- Added new effect routing from delay and chorus to reverb.
- Added master slider.
- Added overview to piano roll editor.
- Added overview to automation editor.
- Added count-in for recording.
- Added an option for Quick Look to audition exported audio
- Added ability to selected MIDI input source in stand alone.
- Added indicator of selected bar.
- Added an option to disable sequencer.
- Improved DSP performance.
- Improved editing functions of piano roll editor.
- Improved editing functions of automation editor.
- Improved undo and redo.
- Fixed font size scaling for iPhone.
- Fixed window scaling of iPhone.
- Fixed behavior of size parameter of reverb effect when sync is enabled.
- Fixed a problem that playback doesn't start from loop start when length of clips are different.
- Fixed problems of MIDI CC mapping.
- Fixed a problem of processing MIDI events while sequencer is running.
- Update Ableton Link Framework to the latest version.

## What's new in version 1.0.5

- Support iOS 17 / iPadOS 17.
- Support macOS Sonoma 14.