NOVEL    MUSIC

# SEEDS

reference manual

# SEEDS

Version 1.8
Tested with Live 12.0.0 / Max 8.6.1

SEEDS is a collection of 8 Max for Live MIDI devices that augment Ableton Live's virtual playground with endless possibilities for composition, improvisation, and production.

SEEDS places advanced musical concepts at your fingertips, allowing for the creation of complex rhythms, harmonies, and textures with ease. The system includes 2 Clock Devices, 2 Sequencers, 2 Modulators, and 2 Utilities that communicate with each other through a system of virtually connected MIDI input and output ports.

The devices are designed to encourage exploration through stochastic algorithms shaped by your decisions and MIDI input in real time. SEEDS can work alongside your existing Audio and MIDI tracks, or as the main control center for your hardware synths, drum machines, and samplers. Extensive support for Push controllers is included.

## CONTENTS
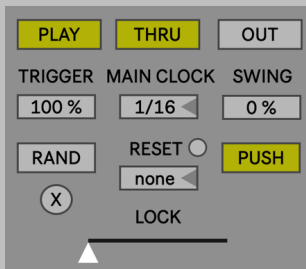
# CLOCKS

## CHRONOLOGY
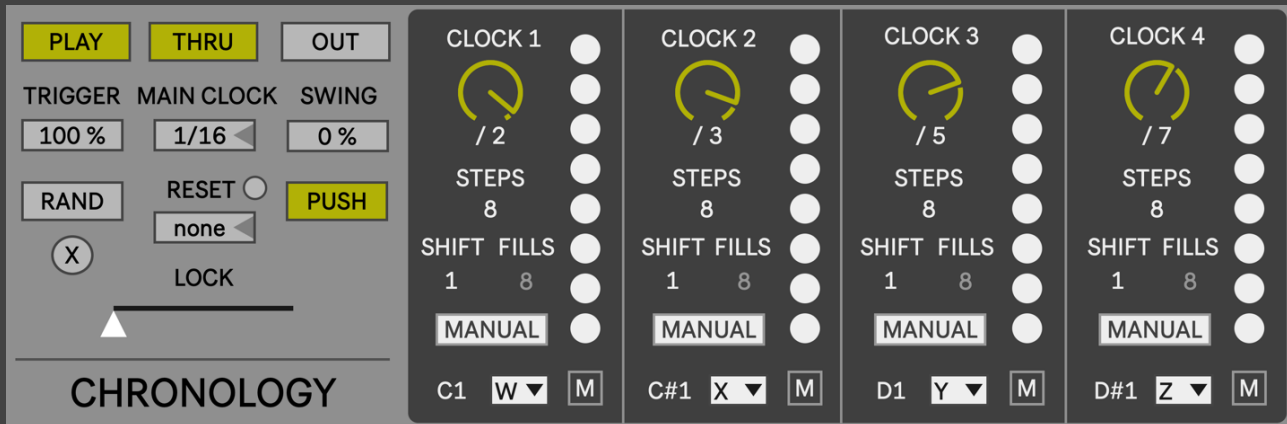


A clock generator with up to four simultaneous outputs, each running at an assigned division of a common main pulse. Features manual and Euclidean sequencing options for each clock output.



**Play**
Starts and stops the Main Clock.

**Thru**
Allow incoming MIDI messages to pass through the device.

**Out**
Output the sequenced MIDI notes directly from the device (in addition to the assignable Hub output ports for each Clock).

**Trigger**
Controls the chance of positive triggers for all four Clock sequencers.

**Main Clock**
Assign the Main Clock's pulse in relation to the Live Set's current BPM.

**Swing**
Controls the amount of Swing applied to all four Clock sequencers.

**Random Pattern**
Generate a random pattern for all four Clock sequences.

**Clear Pattern**
Reset all four Clock sequences to their default values.

**Reset Interval**
Select an interval (in quarter note beats) for automatically resetting the four Clock sequences to the first step.

If "bar" is selected, the sequencers will reset on every downbeat of Live's current time signature setting.

**Enable Push**
Enables a custom pad layout available for all Ableton Push controllers (see the bottom of this page). This parameter is inactive if no device is connected to the system.

**Lock**
Provides global control over the amount of randomness for each probabilistic parameter.

When the slider is set fully to the left, non-repeating random values occur. As the slider moves from left to right, the chance of randomness decreases and the pattern begins to repeat without variation.

## Clock Division
Assign a division of the Main Clock's pulse.

## Steps
Sets the number of steps in a sequence.

## Shift
Shifts the current sequence pattern forward and backward by the given value.

## Fills
Set the number of triggers in a sequence pattern ("Euclidean" mode only).

## Pitch
Selects the MIDI note that will be triggered by the sequence pattern.

## Output Port
Assign the Output Port to send MIDI messages to other SEEDS devices throughout your Live Set.

## Mute
Sets a clock output to be muted or unmuted.

## Sequence Grid
Activate and deactivate steps on the grid. When set to Euclidean sequencing (see Mode), any changes made to the steps will revert the setting back to Manual.
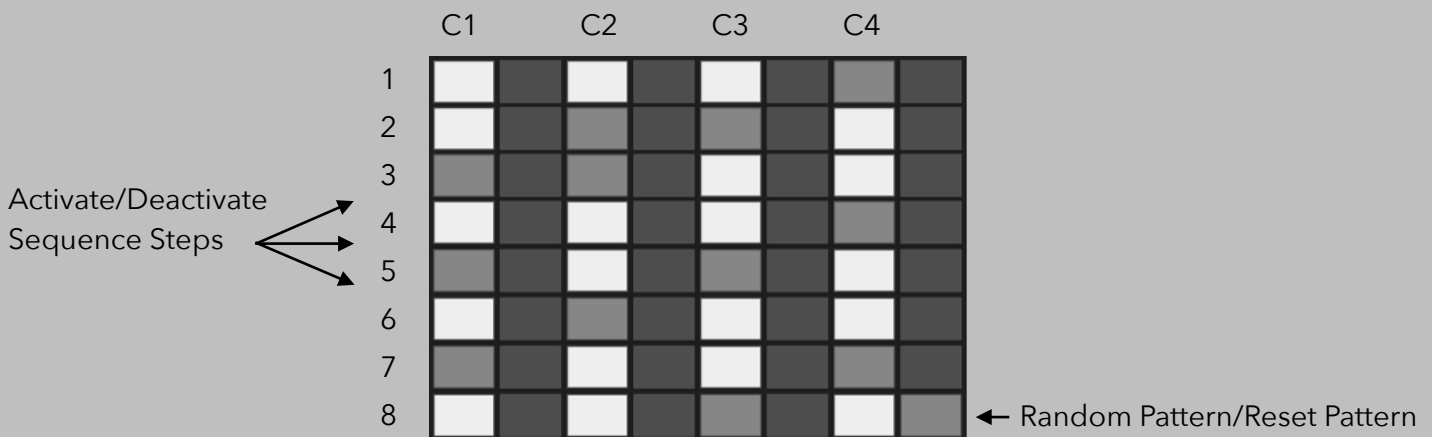
## Mode
Choose between two modes for generating sequences:

Euclidean - utilizes Godfried Toussaint's algorithm to calculate the most equidistant spacing of fills within a given number of steps. Note: If you override the sequence by adding or removing steps, the mode will jump back to Manual.

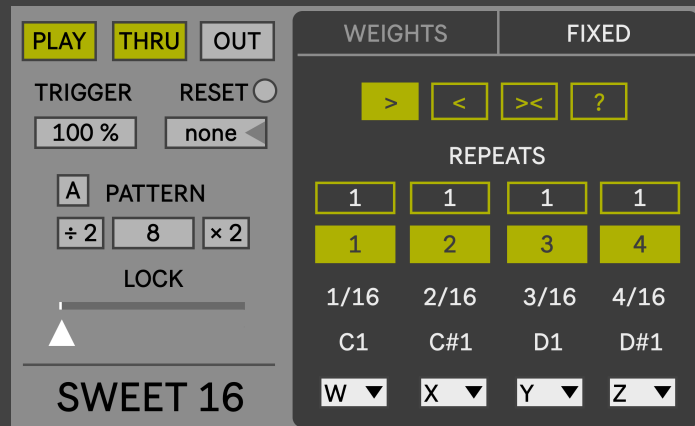Manual – freely create your own pattern.

## CHRONOLOGY Custom Push Layout

To reset all four Clock sequences to their default values, hold Shift and press pad 64 on the Push (bottom right pad).

# CLOCKS

## SWEET 16

| | | | |
|---|---|---|---|
| PLAY | THRU | OUT | |

| WEIGHTS | FIXED |
|---|---|

TRIGGER    RESET ○

100 %    none ◄

| > | < | >< | ? |

REPEATS

| 1 | 1 | 1 | 1 |
| 1 | 2 | 3 | 4 |

| 1/16 | 2/16 | 3/16 | 4/16 |
| C1 | C#1 | D1 | D#1 |
| W ▼ | X ▼ | Y ▼ | Z ▼ |

A  PATTERN

÷ 2    8    × 2

LOCK

▲

SWEET 16

An experimental clock generator that uses four weights to determine the rate of an output pulse measured in 16th notes or 8th note triplets.

Features a pattern soft lock and fixed mode for more predictable rhythmic phrases.

**Play**
Starts and stops the device.

**Thru**
Allow incoming MIDI messages to pass through the device.

**Out**
Output the sequenced MIDI notes directly from the device (in addition to the assignable Output Ports for each Clock).

**Trigger**
Controls the chance of positive triggers for all four Clocks.

**Reset Interval**
Select an interval (in quarter note beats) for automatically resetting the four Clock sequences to the first step.

If "bar" is selected, the sequencers will reset on every downbeat of Live's current time signature setting.

**Auto Pattern Length**
Automatically resizes the patten length to match the total number (sum) of all repeats generated while in Fixed mode.

**Pattern Size**
Sets the size of the trigger pattern. Every positive trigger represents one space in the pattern.

**Half and Double**
Halves or doubles the current pattern size. If the current pattern is an odd length, the halved value is rounded.

**Lock**
Provides global control over the amount of randomness for each probabilistic parameter.

When the slider is set fully to the left, non-repeating random values occur. As the slider moves from left to right, the chance of randomness decreases and the pattern begins to repeat without variation.

## Navigation Tab

Choose between two modes of operation:

Weights - Output ports are selected based on chance.

Fixed - Output ports are selected based on a predictable order.

## Weights

Controls the chance of the active output port. The higher the slider value, the more likely that port will be triggered.

## Fixed Order

Set the direction of playback in Fixed Mode (forward, reverse, forward/reverse, and random).

## Repeats

Select the number of times a port is active before moving on to the next step (Fixed Mode only).

## Rate

Sets the rate for each clock in 16th notes (0.5/16 to 16/16), 8th note triplets (0.5/12 to 12/12), or 8th note quintuplets (0.5/10 to 10/10).

## Pitch

Assigns the MIDI note that will be triggered by the clock and sent through the output port.

## Output Ports

Assign the Output Ports to send MIDI messages to other SEEDS devices throughout your Live Set.

# SEQUENCERS
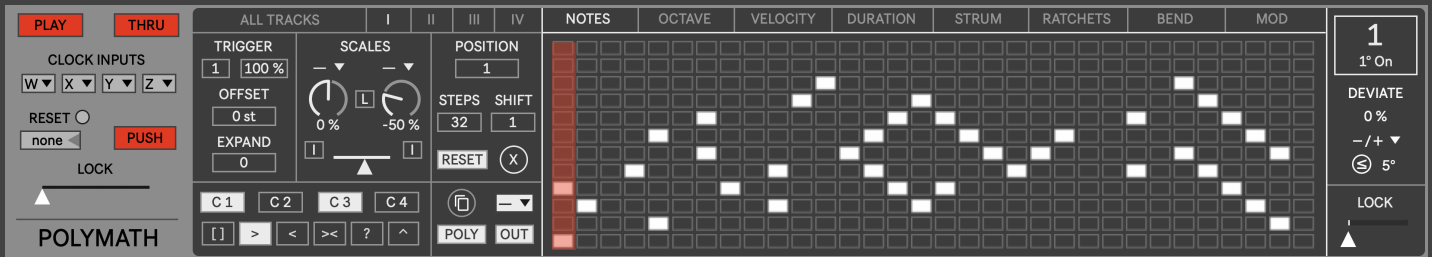
## POLYMATH



Polymath is a polyphonic sequencer that runs up to four independent tracks simultaneously. It is capable of producing classic and experimental types of bass, lead, and chordal sequences through a unique bi-tonal hybrid scale system, multiple input clock pulse combinations, and independent settings and deviations across eight lanes of sequencer data per track. Various input and output assignments allow Polymath to be the brains of your Live Set to sequence your hardware and software instruments.



**Play**
Starts and stops the device.

**Thru**
Allow incoming MIDI messages to pass through the device.

**Clock Inputs**
Select a Hub port to receive clock pulses, typically from Chronology or Sweet 16. MIDI note-on messages sent through the selected port can also be used to generate a clock pulse.

**Reset Interval**
Select an interval (in quarter note beats) for automatically resetting the four sequencers to the first step.

If "bar" is selected, the sequencers will reset on every downbeat of Live's current time signature setting.

**Enable Push**
Enables a custom pad layout available for all Ableton Push controllers (see pg. 17). This parameter is inactive if no device is connected to the system.

**Global Lock**
Controls the amount of randomness for each deviation across all four sequencer tracks.
When the slider is set fully to the left, non-repeating random deviations occur. As the slider moves from left to right, the chance of deviations decreases and the values stored in the memory buffer begin to form repeating patterns.
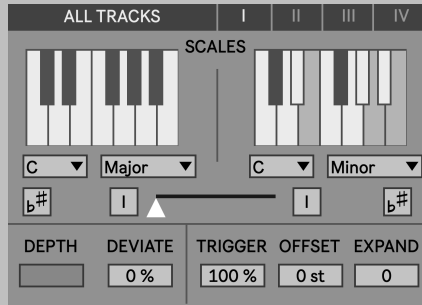
## Navigation Tab

Select to view global settings for all four sequencer tracks (including scales) or each individual track.

## All Tracks Menu



**Key 1 and Key 2**
Select a key to be used by all four note sequencers.

**Scale 1 and Scale 2**
Select a scale to be used by all four note sequencers. User 1, 2, 3, and 4 presets can be configured by clicking on the piano keyboard display.

**All Scales Invert 1 and All Scales Invert 2**
Inverts notes to stay within the selected Key and Scale across all four tracks.

**Use Current Scale 1 and Use Current Scale 2 (Live 12+ Only)**
When enabled, Polymath's Key and Scale settings are synchronized with the Live Set's Key and Scale.

**All Scales Morph**
Morphs all four sequencer tracks between scale 1 and scale 2. When set to the far left, only scale 1 will be triggered. All slider values in between result in a proportionally random selection between the two scales based on the position of the slider. When the slider is set all the way to the right, only scale 2 is used.

**All Depth** (octave, velocity, duration, strum, ratchets, bend)
Scale the sequencer lane values for all four tracks. A setting of 100% represents a standard ratio. Note: this setting does not affect the deviation range for the selected sequencer lane.

**All Deviate** (notes, octave, velocity, duration, strum, ratchets, bend, mod)
Sets the chance of deviation for the selected sequencer lane across all four tracks.

**All Triggers**
Controls the chance of a positive sequence trigger across all four tracks.

**All Offset**
Applies a final octave offset on all four sequencer tracks. This offset is applied after any changes are made by the octave sequence lane or deviation.
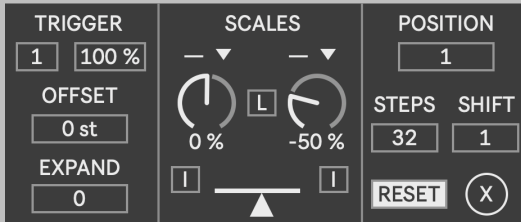
**All Expand**
Adds random notes to all four sequencer tracks. Higher values result in more densely spaced note additions.

If this value is above 0 and you manually add or remove notes from the sequence, the expand parameter will automatically reset to 0.

Note: If a note sequence lane is empty, the expand value is ignored until at least one step is manually filled.

# Tracks I, II, III, IV Menu

**Trigger Interval**
Determines how many incoming sequence steps will be processed by the trigger parameter. For example: A value of 2 would only allow every other sequence step to be potentially triggered.

**Trigger**
Controls the chance of positive triggers for all 32 sequence steps.

**Octave Offset**
Applies a final octave offset over the entire sequence. This offset is applied after any changes made by the octave sequence lane or deviation.

**Expand**
Adds random notes to your sequence. Higher values result in more densely spaced note additions. If this value is higher than 0, and you manually add or remove notes from the sequence, the expand parameter will automatically reset to 0. Note: If a note sequence lane is empty, the expand value is ignored until at least one step is manually filled.

**Scale Offset Input 1**
Sets the incoming port to modulate the Scale 1 offset via MIDI notes sent by a Hub device.

**Scale 1 Offset**
Shifts the starting scale degree for the notes sequencer lane.

**Scale Offset Input 2**
Sets the incoming port to modulate the Scale 2 offset via MIDI notes sent by a Hub device.

**Scale 2 Offset**
Shifts the starting scale degree for the notes sequencer lane.

**Offset Link**
Links the scale 1 and scale 2 offset parameters. Note: an adjustment made to scale 2 will not be applied to scale 1.

**Scale 1 Invert**
Inverts notes to stay within the selected Key and Scale.

**Scale 2 Invert**
Inverts notes to stay within the selected Key and Scale.

**Scale Morph**
Morph between scale 1 and scale 2. When set to the far left, only scale 1 will be triggered. All slider values in between result in a proportionally random selection between the two scales based on the position of the slider. When the slider is set all the way to the right, only scale 2 is used.

**Position**
Sets the sequence loop's starting step position.

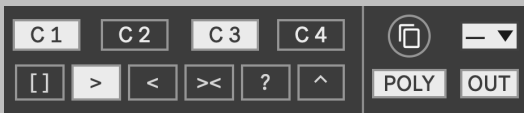**Steps**
Sets the number of sequence steps.

**Shift**
Sets the starting point of the sequence, based on the current number of steps.

**Reset**
Enables and disables a timed sync reset. This timed value is set by the Reset Interval parameter on the far right side of the device.

**Delete**
Deletes the currently selected sequence lane's values and applies the default settings.
When this button is held down for two seconds, all sequence lanes will be erased and reset to the default values.

## Clock 1, Clock 2, Clock 3, Clock 4

Enables or disables the incoming clock pulses as configured under the Clock Input section on the far left side of the device.

### Playback Direction

Sets the direction of playback for the sequencer:

[ ]  - stop
>   - forward
<   - reverse
><  - forward/reverse
?   - random
^   - hold

### Copy

Copies the entire track sequence (all lanes) to another track (click on the flashing sequencer track selector to choose the paste destination).

### Hub Output

Assign the output port of the sequencer track to be received by a Hub device placed anywhere in your Live Set.

### Mono/Poly

Sets either monophonic or polyphonic output of the sequencer track. If multiple notes are active on a single step in mono mode, the lowest note will be output.
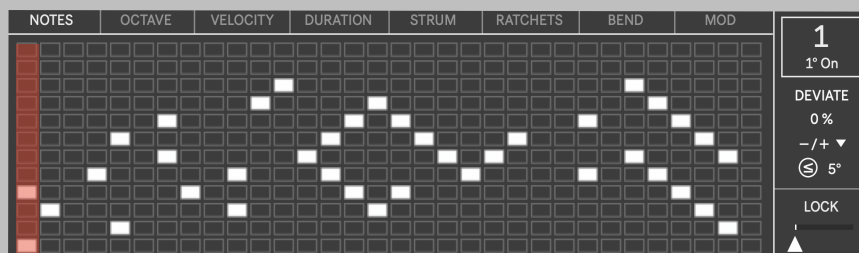
### Out

Allow the sequencer track to be sent through the main output of the device. When toggled off, the Hub Output continues to be open (if it is assigned).

### Lock

Provides control over the amount of randomness for the selected track. This value applies for all eight sequencer lanes within the track.

When the slider is set fully to the left, non-repeating random deviations occur. As the slider moves from left to right, the chance of deviations decreases and the values stored in the memory buffer begin to form repeating patterns based on the current loop length.

## Sequencer Lanes



### Notes Lane

Trigger up to twelve notes per step on the grid. Each grid square represents a discrete pitch determined by the current scale and scale morph position settings.

### Notes Deviation

Sets the chance of deviating notes triggered by the sequencer.

### Notes Polarity

Sets the direction of deviation modulation:
Positive ( + )
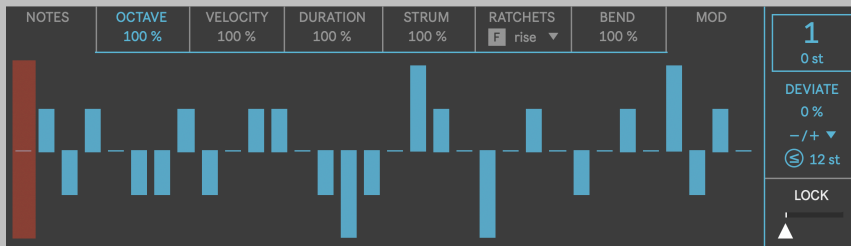Bipolar ( − / + )
Negative ( − )

### Notes Modulation

Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

### Notes Range

Sets the range of modulation (measured in scale degrees) applied to be equal to or less than the displayed value.

## Octave Lane

Displace the sounding octave for each step, with a range of -24st to 24st.



### Octave Depth

Scale the sequencer lane values (0% to 200%). A setting of 100% represents a standard ratio. Note: this setting does not affect the deviation range for the selected sequencer lane.

### Octave Deviation

Sets the chance of deviating octaves triggered by the sequencer.

### Octave Polarity

Sets the direction of deviation modulation:

Positive ( + )

Bipolar ( −/+ )

Negative ( − )

### Octave Modulation

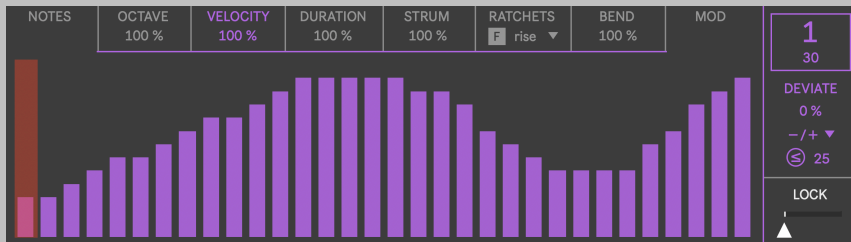Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

### Octave Range

Sets the range of modulation (measured in octaves) applied to be equal to or less than the displayed value.

## Velocity Lane

Set the velocity for each step with a standard range of 0 to 127. For ease of use and precision, these values are stepped and move in increments of 10.



### Velocity Depth

Scale the sequencer lane values (0% to 200%). A setting of 100% represents a standard ratio. Note: this setting does not affect the deviation range for the selected sequencer lane.

### Velocity Deviation

Sets the chance of deviating velocity values triggered by the sequencer.

### Velocity Polarity

Sets the direction of deviation modulation:

Positive ( + )

Bipolar ( −/+ )

Negative ( − )

### Velocity Modulation

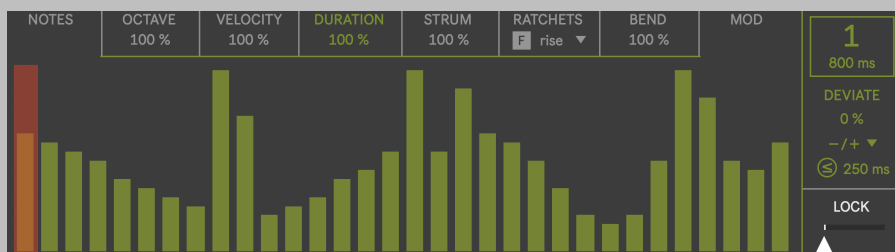Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

### Velocity Range

Sets the range of modulation (measured in MIDI velocities) applied to be equal to or less than the displayed value.

## Duration Lane

Set the note duration for each step with a range of 25ms to infinity. For ease of use and precision, these values are stepped and move in exponential increments.



### Duration Depth

Scale the sequencer lane values (0% to 1000%). A setting of 100% represents a standard ratio. Note: this setting does not affect the deviation range for the selected sequencer lane.

### Duration Deviation

Sets the chance of deviating note durations triggered by the sequencer.

### Duration Polarity

Sets the direction of deviation modulation:
Positive ( + )
Bipolar ( − / + )
Negative ( − )
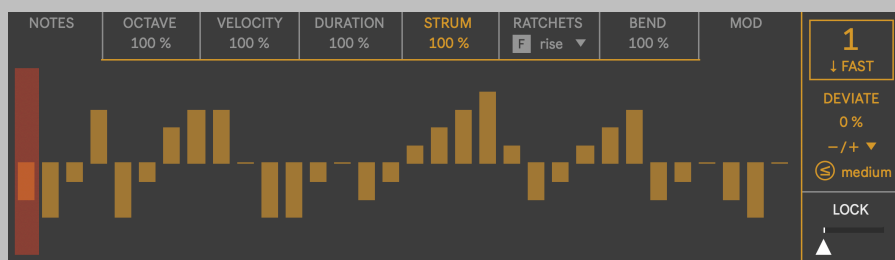
### Duration Modulation

Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

### Duration Range

Sets the range of modulation (measured in milliseconds) applied to be equal to or less than the displayed value.

## Strum Lane

Set the strum amount for each step with a range of slowest, slow, medium, fast, and fastest. This lane is bipolar, with positive values representing an upward strum from the lowest note up to the highest and negative values vice-versa. Note: values assigned in the strum lane are only observed if a note lane step has more than one note assigned, otherwise the step will be ignored.



### Strum Depth

Scale the sequencer lane values (0% to 200%). A setting of 100% represents a standard ratio. Note: this setting does not affect the deviation range for the selected sequencer lane.

### Strum Deviation

Sets the chance of deviating strum values triggered by the sequencer.
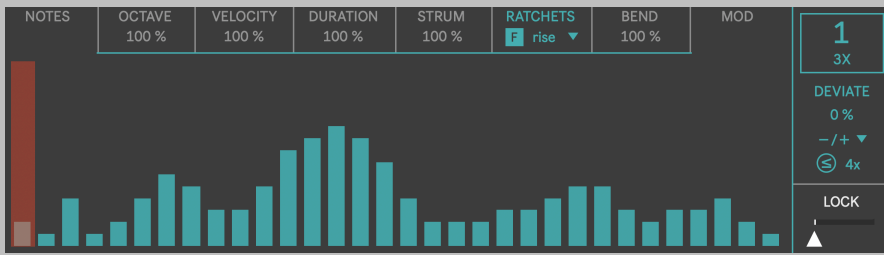
### Strum Polarity

Sets the direction of deviation modulation:
Positive ( + )
Bipolar ( − / + )
Negative ( − )

### Strum Modulation

Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

### Strum Range

Sets the range of modulation (measured in strum speed values) applied to be equal to or less than the displayed value.

## Ratchets Lane

Set a ratchet (also known as retrigger) for each step with a range of 1x (none) to 16x.

## Ratchets Speed

Sets the tempo relative speed of ratchets (slow or fast).

## Ratchet Envelope

Apply a scaled velocity envelope over the ratchets:

Flat - no envelope applied.
Fall - a falling envelope from the input velocity to 0.

Rise - a rising envelope from 0 to the input velocity.
Random - a random selection of velocities.

### Ratchets Deviation

Sets the chance of deviating ratchets triggered by the sequencer.

### Ratchets Polarity

Sets the direction of deviation modulation:
Positive ( + )
Bipolar ( − / + )
Negative ( − )

### Ratchets Modulation

Choose between two modes of deviation:
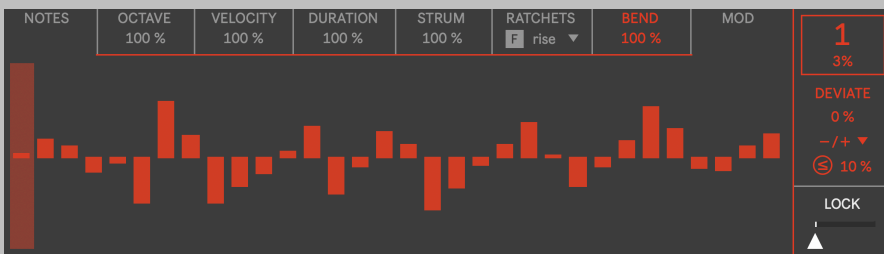
= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

### Ratchets Range

Sets the range of modulation (measured in number of ratchets) applied to be equal to or less than the displayed value.

## Bend Lane

Set the pitch bend for each step with a range of -50% to 50%. This parameter is represented as a percentage because the pitch bend range is defined by your hardware or software instrument's pitch bend settings.



## Bend Depth

Scale the sequencer lane values (0% to 200%). A setting of 100% represents a standard ratio. Note: this setting does not affect the deviation range for the selected sequencer lane.

### Bend Deviation

Sets the chance of deviating pitch bends triggered by the sequencer.

### Bend Polarity

Sets the direction of deviation modulation:
Positive ( + )
Bipolar ( − / + )
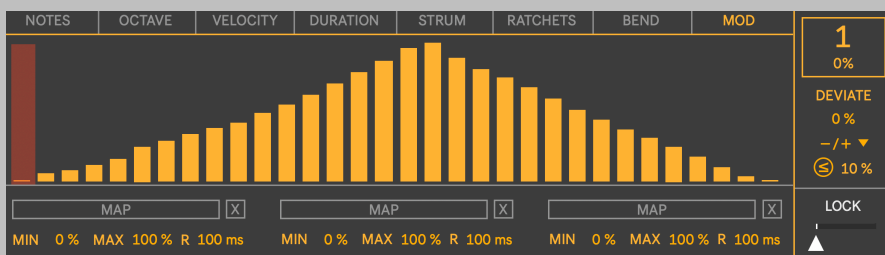Negative ( − )

### Bend Modulation

Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

### Bend Range

Sets the range of modulation (measured in pitch bend percentages) applied to be equal to or less than the displayed value.

## Mod Lane

Set the amount of modulation for up to three remotely mapped parameters on each step between 0% to 100%. This lane behaves similarly to an LFO, allowing parameters to move in tandem with your sequence, for predictable and musical results.

## Map

Click on the button to enable map listening mode. The text will flash orange until you click on any mappable parameter in Live. All control of the parameter will be given to Polymath until it is released by the map clear button.

**Map Clear**
Confirm the release of the currently mapped parameter.

**Min**
Sets the minimum value that will be output by the modulation.

**Max**
Sets the maximum value that will be output by the modulation.

**Ramp**
Sets the time it takes modulated parameters to reach their destination value.

**Mod Deviation**
Sets the chance of deviating modulation values triggered by the sequencer.

**Mod Polarity**
Sets the direction of deviation modulation:
Positive ( + )
Bipolar ( − / + )
Negative ( − )

**Mod Modulation**
Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

**Mod Range**
Sets the range of modulation (measured in percentages) applied to be equal to or less than the displayed value.

# POLYMATH Custom Push Layout

### All Tracks Display



### Track Display



To copy the contents of one track to another:
1) hold down the Track Selection button for two seconds
2) the button will flash, indicating that a copy operation is ready
3) select the destination track

To delete an entire sequence lane:
1) hold down the shift button
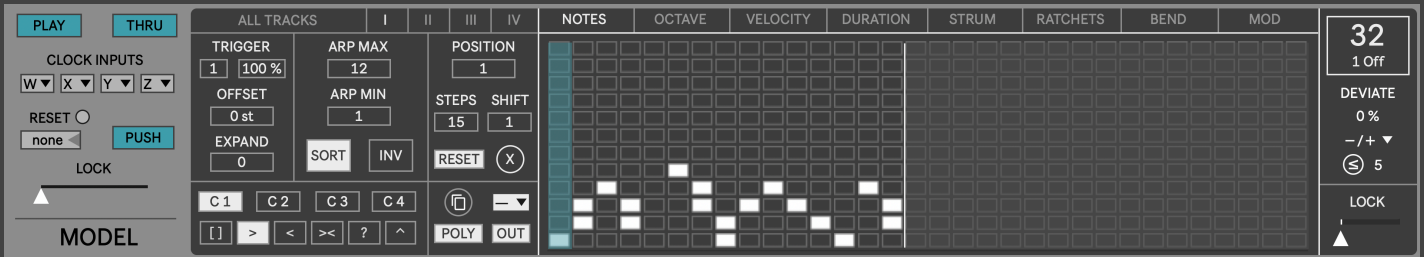2) select the sequence lane that will be deleted

To delete notes on one step:
1) hold down the shift button
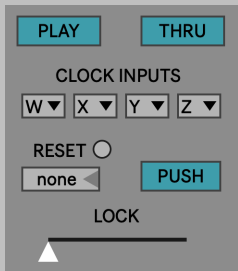2) select the step that will have notes deleted

To delete an entire track:
1) hold down the shift button
2) select the track that will be deleted

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# SEQUENCERS

## MODEL



Model is an advanced polyphonic arpeggiator/sequencer that runs up to four independent tracks simultaneously. Featuring many of the same powerful controls from Polymath, Model sequences your incoming MIDI notes to create unique accompaniment patterns and textures, or surprising melodies that change with your note input. The device includes different modes for sorting incoming notes, including range limiting and inversion. The assignable outputs for each track allow for easy manipulation of complex orchestrations in real time.



**Play**
Starts and stops the device.

**Thru**
Allow incoming MIDI messages to pass through the device.

**Clock Inputs**
Select a Hub port to receive clock pulses, typically from Chronology or Sweet 16. MIDI note-on messages sent through the selected port can also be used to generate a clock pulse.

**Reset Interval**
Select an interval (in quarter note beats) for automatically resetting the four sequencers to the first step.

If "bar" is selected, the sequencers will reset on every downbeat of Live's current time signature setting.

**Enable Push**
Enables a custom pad layout available for all Ableton Push controllers (see pg. 17). This parameter is inactive if no device is connected to the system.
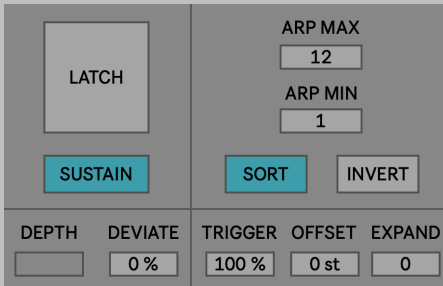
**Global Lock**
Controls the amount of randomness for each deviation across all four sequencer tracks.
When the slider is set fully to the left, non-repeating random deviations occur. As the slider moves from left to right, the chance of deviations decreases and the values stored in the memory buffer begin to form repeating patterns.

**Navigation Tab**
Select to view global settings for all four sequencer tracks or each individual track.

## All Tracks Menu

---

| | | |
|---|---|---|
| | ARP MAX | |
| | 12 | |
| LATCH | ARP MIN | |
| | 1 | |
| SUSTAIN | SORT | INVERT |

| DEPTH | DEVIATE | TRIGGER | OFFSET | EXPAND |
|---|---|---|---|---|
| | 0 % | 100 % | 0 st | 0 |

**Latch**
Holds on to incoming MIDI notes after being released on a MIDI input device. New notes can be added to the pool if the sustain pedal is depressed or when previous notes continue to be held down on a MIDI keyboard.

**Sustain**
Allows all MIDI sustain pedal (CC 64) messages to pass through the device even when THRU is deactivated.

**All Arp Max**
Sets the highest note that will be triggered in the current pool of held MIDI notes.

**All Sort**
When enabled, the arpeggiated note grid will play the notes in order from bottom (row 1) to top (row 12) for all four tracks. New notes added will cause the order to be resorted. When is Sort is disabled, the played order is used and it will not be updated as new notes are added.

**All Arp Min**
Sets the lowest note that will be triggered in the current pool of held MIDI notes.

**All Invert**
Inverts the relationship of the arp notes currently active on the grid for all four tracks. The highest notes are triggered from the bottom and vice-versa.

**All Depth** (octave, velocity, duration, strum, ratchets, bend)
Scale the sequencer lane values for all four tracks. A setting of 100% represents a standard ratio. Note: this setting does not affect the deviation range for the selected sequencer lane.

**All Deviate** (notes, octave, velocity, duration, strum, ratchets, bend, mod)
Sets the chance of deviation for the selected sequencer lane across all four tracks.

**All Triggers**
Controls the chance of a positive sequence trigger across all four tracks.

**All Offset**
Applies a final octave offset on all four sequencer tracks. This offset is applied after any changes are made by the octave sequence lane or deviation.
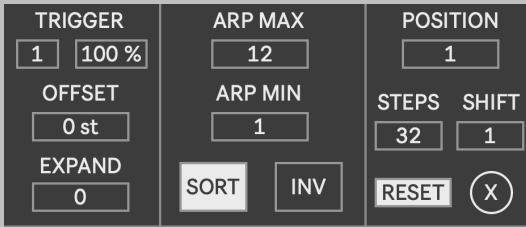
**All Expand**
Adds random notes to all four sequencer tracks. Higher values result in more densely spaced note additions.

If this value is above 0 and you manually add or remove notes from the sequence, the expand parameter will automatically reset to 0.

Note: If a note sequence lane is empty, the expand value is ignored until at least one step is manually filled.

# Tracks I, II, III, IV Menu

| TRIGGER | | ARP MAX | POSITION | |
|---|---|---|---|---|
| 1 | 100 % | 12 | 1 | |
| OFFSET | | ARP MIN | STEPS | SHIFT |
| 0 st | | 1 | 32 | 1 |
| EXPAND | | | | |
| 0 | | SORT   INV | RESET  (X) | |

**Trigger Interval**
Determines how many incoming sequence steps will be processed by the trigger parameter. For example: A value of 2 would only allow every other sequence step to be potentially triggered.

**Trigger**
Controls the chance of positive triggers for all 32 sequence steps.

**Octave Offset**
Applies a final octave offset over the entire sequence. This offset is applied after any changes made by the octave sequence lane or deviation.

**Expand**
Adds random notes to your sequence. Higher values result in more densely spaced note additions. If this value is higher than 0, and you manually add or remove notes from the sequence, the expand parameter will automatically reset to 0. Note: If a note sequence lane is empty, the expand value is ignored until at least one step is manually filled.

**Arp Max**
Sets the highest note that will be triggered in the current pool of held MIDI notes.

**Arp Min**
Sets the lowest note that will be triggered in the current pool of held MIDI notes.

**Sort**
When Sort is enabled, the arpeggiated note grid will play the notes in order from bottom (row 1) to top (row 12). New notes added will cause the order to be resorted.

When is Sort is disabled, the played order is used and it will not be updated as new notes are added.

**Invert**
Inverts the relationship of the arp notes currently active on the grid. The highest notes are triggered from the bottom and vice-versa.

**Position**
Sets the sequence loop's starting step position.

**Steps**
Sets the number of sequence steps.

**Shift**
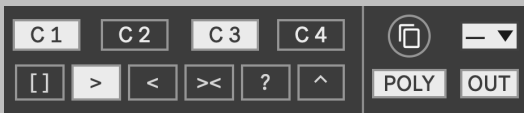Sets the starting point of the sequence, based on the current number of steps.

**Reset**
Enables and disables a timed sync reset. This timed value is set by the Reset Interval parameter on the far right side of the device.

**Delete**
Deletes the currently selected sequence lane's values and applies the default settings.
When this button is held down for two seconds, all sequence lanes will be erased and reset to the default values.

**Clock 1, Clock 2, Clock 3, Clock 4**
Enables or disables the incoming clock pulses as configured under the Clock Input section on the far left side of the device.

**Playback Direction**
Sets the direction of playback for the sequencer:
[ ]  - stop
>   - forward
<   - reverse
><  - forward/reverse
 ?  - random
 ^  - hold

**Copy**
Copies the entire track sequence (all lanes) to another track (click on the flashing sequencer track selector to choose the paste destination).

**Hub Output**
Assign the output port of the sequencer track to be received by a Hub device placed anywhere in your Live Set.

**Mono/Poly**
Sets either monophonic or polyphonic output of the sequencer track. If multiple notes are active on a single step in mono mode, the lowest note will be output.
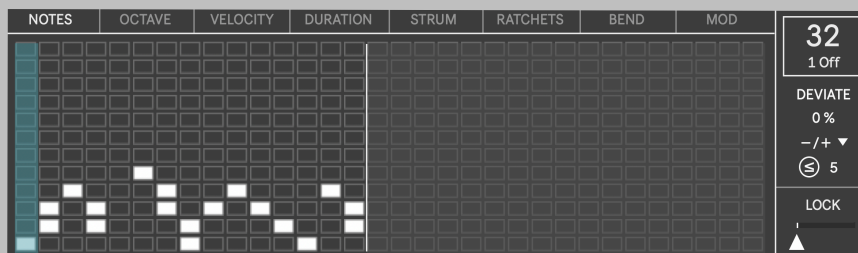
**Out**
Allow the sequencer track to be sent through the main output of the device. When toggled off, the Hub Output continues to be open (if it is assigned).

**Lock**
Provides control over the amount of randomness for the selected track. This value applies for all eight sequencer lanes within the track.

When the slider is set fully to the left, non-repeating random deviations occur. As the slider moves from left to right, the chance of deviations decreases and the values stored in the memory buffer begin to form repeating patterns based on the current loop length.

## Sequencer Lanes



**Arp Notes Lane**
Trigger up to twelve notes per step on the grid. Each grid square represents a discrete pitch determined by the current scale and scale morph position settings.

**Arp Notes Deviation**
Sets the chance of deviating notes triggered by the sequencer.

**Arp Notes Polarity**
Sets the direction of deviation modulation:
Positive ( + )
Bipolar ( − / + )
Negative ( − )
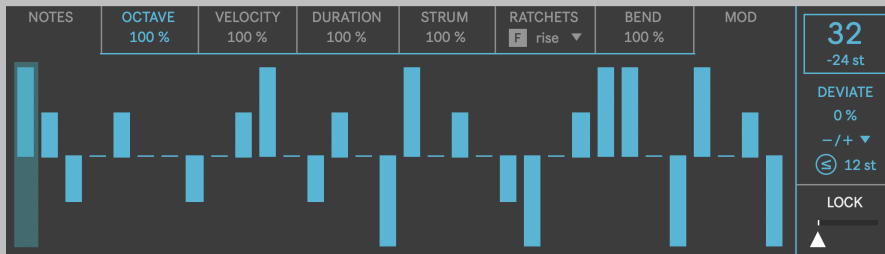
**Arp Notes Modulation**
Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

**Arp Notes Range**
Sets the range of modulation (measured in scale degrees) applied to be equal to or less than the displayed value.

## Octave Lane

Displace the sounding octave for each step, with a range of -24st to 24st.



### Octave Depth
Scale the sequencer lane values (0% to 200%). A setting of 100% represents a standard ratio. Note: this setting does not affect the deviation range for the selected sequencer lane.

### Octave Deviation
Sets the chance of deviating octaves triggered by the sequencer.

### Octave Polarity
Sets the direction of deviation modulation:
Positive ( + )
Bipolar ( −/+ )
Negative ( − )

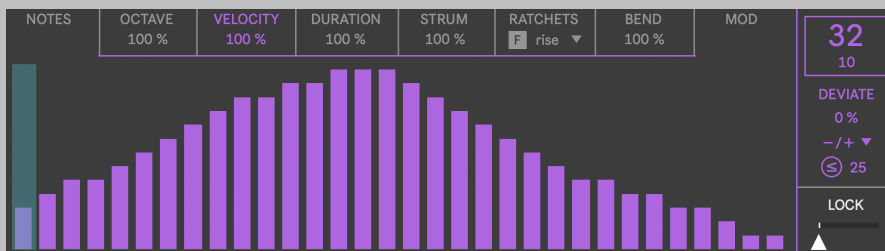### Octave Modulation
Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

### Octave Range
Sets the range of modulation (measured in octaves) applied to be equal to or less than the displayed value.

## Velocity Lane

Set the velocity for each step with a standard range of 0 to 127. For ease of use and precision, these values are stepped and move in increments of 10.



### Velocity Depth
Scale the sequencer lane values (0% to 200%). A setting of 100% represents a standard ratio. Note: this setting does not affect the deviation range for the selected sequencer lane.

### Velocity Deviation
Sets the chance of deviating velocity values triggered by the sequencer.

### Velocity Polarity
Sets the direction of deviation modulation:
Positive ( + )
Bipolar ( −/+ )
Negative ( − )

### Velocity Modulation
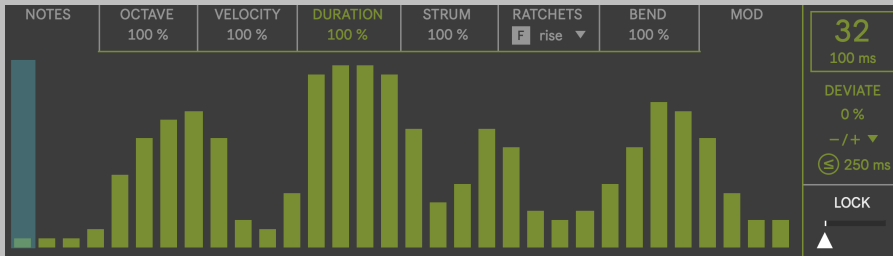Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

### Velocity Range
Sets the range of modulation (measured in MIDI velocities) applied to be equal to or less than the displayed value.

## Duration Lane

Set the note duration for each step with a range of 25ms to infinity. For ease of use and precision, these values are stepped and move in exponential increments.



### Duration Depth

Scale the sequencer lane values (0% to 1000%). A setting of 100% represents a standard ratio. Note: this setting does not affect the deviation range for the selected sequencer lane.

**Duration Deviation**

Sets the chance of deviating note durations triggered by the sequencer.

**Duration Polarity**

Sets the direction of deviation modulation:

Positive ( + )

Bipolar ( − / + )

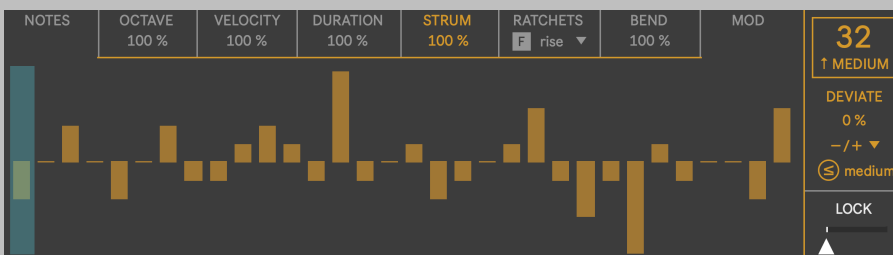Negative ( − )

**Duration Modulation**

Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

**Duration Range**

Sets the range of modulation (measured in milliseconds) applied to be equal to or less than the displayed value.

## Strum Lane

Set the strum amount for each step with a range of slowest, slow, medium, fast, and fastest. This lane is bipolar, with positive values representing an upward strum from the lowest note up to the highest and negative values vice-versa. Note: values assigned in the strum lane are only observed if a note lane step has more than one note assigned, otherwise the step will be ignored.



### Strum Depth

Scale the sequencer lane values (0% to 200%). A setting of 100% represents a standard ratio. Note: this setting does not affect the deviation range for the selected sequencer lane.

**Strum Deviation**

Sets the chance of deviating strum values triggered by the sequencer.

**Strum Polarity**

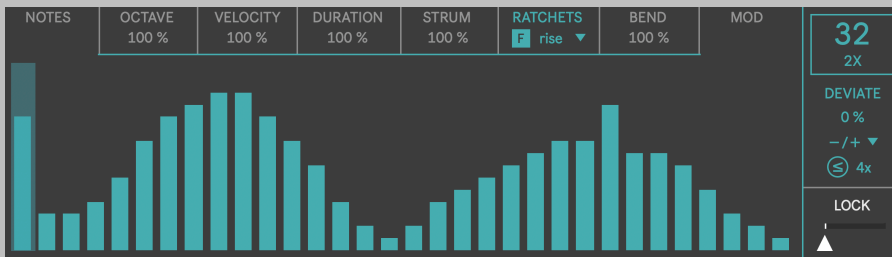Sets the direction of deviation modulation:

Positive ( + )

Bipolar ( − / + )

Negative ( − )

**Strum Modulation**

Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

**Strum Range**

Sets the range of modulation (measured in strum speed values) applied to be equal to or less than the displayed value.

## Ratchets Lane

Set a ratchet (also known as retrigger) for each step with a range of 1x (none) to 16x.

## Ratchets Speed

Sets the tempo relative speed of ratchets (slow or fast).

## Ratchet Envelope

Apply a scaled velocity envelope over the ratchets:

Flat - no envelope applied.
Fall - a falling envelope from the input velocity to 0.

Rise - a rising envelope from 0 to the input velocity.
Random - a random selection of velocities.

### Ratchets Deviation

Sets the chance of deviating ratchets triggered by the sequencer.

### Ratchets Polarity

Sets the direction of deviation modulation:
Positive ( + )
Bipolar ( − / + )
Negative ( − )

### Ratchets Modulation

Choose between two modes of deviation:
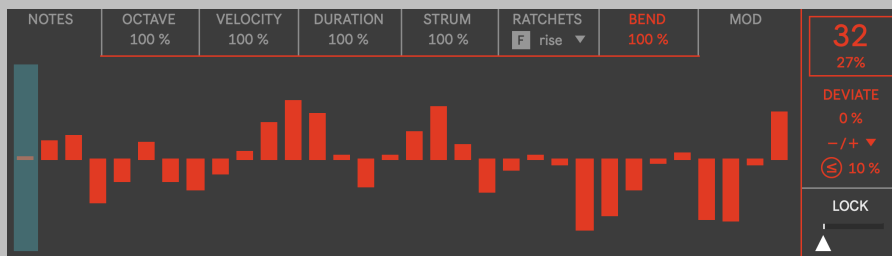
= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

### Ratchets Range

Sets the range of modulation (measured in number of ratchets) applied to be equal to or less than the displayed value.

## Bend Lane

Set the pitch bend for each step with a range of -50% to 50%. This parameter is represented as a percentage because the pitch bend range is defined by your hardware or software instrument's pitch bend settings.



## Bend Depth

Scale the sequencer lane values (0% to 200%). A setting of 100% represents a standard ratio. Note: this setting does not affect the deviation range for the selected sequencer lane.

### Bend Deviation

Sets the chance of deviating pitch bends triggered by the sequencer.

### Bend Polarity

Sets the direction of deviation modulation:
Positive ( + )
Bipolar ( − / + )
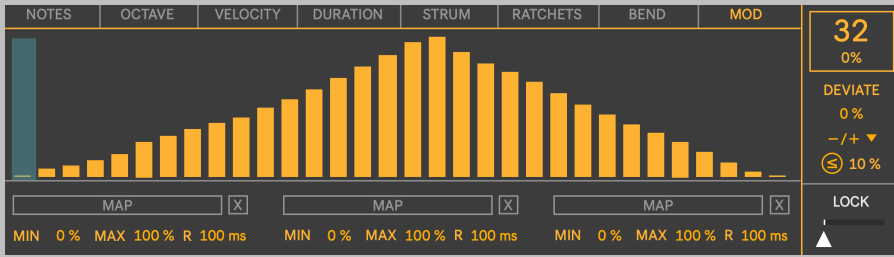Negative ( − )

### Bend Modulation

Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

### Bend Range

Sets the range of modulation (measured in pitch bend percentages) applied to be equal to or less than the displayed value.

## Mod Lane

Set the amount of modulation for up to three remotely mapped parameters on each step between 0% to 100%. This lane behaves similarly to an LFO, allowing parameters to move in tandem with your sequence, for predictable and musical results.

## Map

Click on the button to enable map listening mode. The text will flash orange until you click on any mappable parameter in Live. All control of the parameter will be given to Model until it is released by the map clear button.

### Map Clear

Confirm the release of the currently mapped parameter.

### Min

Sets the minimum value that will be output by the modulation.

### Max

Sets the maximum value that will be output by the modulation.

### Ramp

Sets the time it takes modulated parameters to reach their destination value.

### Mod Deviation

Sets the chance of deviating modulation values triggered by the sequencer.

### Mod Polarity

Sets the direction of deviation modulation:

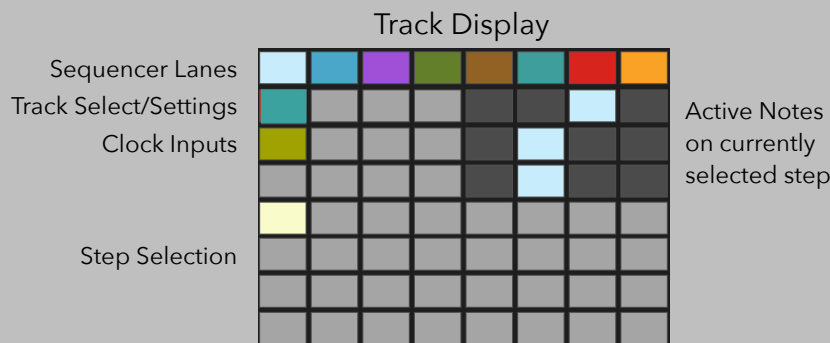Positive ( + )

Bipolar ( − / + )

Negative ( − )

### Mod Modulation

Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

### Mod Range

Sets the range of modulation (measured in percentages) applied to be equal to or less than the displayed value.

## MODEL Custom Push Layout



Track Display

Sequencer Lanes
Track Select/Settings
Clock Inputs

Active Notes on currently selected step

Step Selection

To copy the contents of one track to another:
1) hold down the Track Selection button for two seconds
2) the button will flash, indicating that a copy operation is ready
3) select the destination track

To delete an entire sequence lane:
1) hold down the shift button
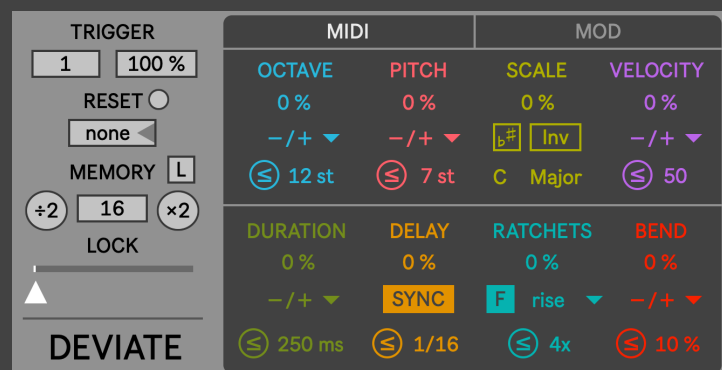2) select the sequence lane that will be deleted

To delete arp notes on one step:
1) hold down the shift button
2) select the step that will have notes deleted

To delete an entire track:
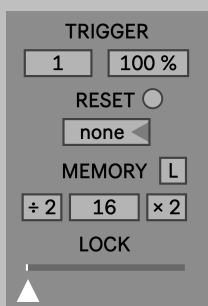1) hold down the shift button
2) select the track that will be deleted

# MODULATORS

## DEVIATE

| TRIGGER | MIDI | | MOD | |
|---|---|---|---|---|
| 1   100 % | OCTAVE | PITCH | SCALE | VELOCITY |
| RESET ○ | 0 % | 0 % | 0 % | 0 % |
| none ◁ | −/+ ▼ | −/+ ▼ | ♭# Inv | −/+ ▼ |
| MEMORY L | ⩽ 12 st | ⩽ 7 st | C  Major | ⩽ 50 |
| ÷2  16  ×2 | DURATION | DELAY | RATCHETS | BEND |
| LOCK | 0 % | 0 % | 0 % | 0 % |
| ▲ | −/+ ▼ | SYNC | F  rise ▼ | −/+ ▼ |
| DEVIATE | ⩽ 250 ms | ⩽ 1/16 | ⩽ 4x | ⩽ 10 % |

Deviate creates endless variations on your MIDI clips or live MIDI input. With a few simple controls, you can humanize performances, create new material from your existing clips, and organically build a track's momentum. Features a pattern soft lock with a 128 step memory buffer for more predictable deviations. In addition, you can map up to 4 parameters in your Live Set for further modulation.

### Trigger Interval
Determines how many incoming MIDI notes will be processed by the device.

For example: A setting of 2 would only allow every other incoming MIDI note to be potentially triggered and deviated.

### Trigger
Sets the chance that incoming MIDI notes will be triggered and processed by the other deviation parameters.

### Reset Interval
Select an interval (in quarter note beats) for automatically resetting the memory buffer to the first step.

If "bar" is selected, the buffer will reset on every downbeat of Live's current time signature setting.

### Clip Learn
Automatically matches the memory buffer size to the number of notes in the currently playing clip slot on Deviate's track.

### Memory Buffer Size
Sets the size of the memory buffer. Every incoming MIDI note takes up one space in the buffer.

### Half and Double
Halves or doubles the current pattern size. If the current pattern is an odd length, the halved value is rounded.

### Lock
Provides global control over the amount of randomness for each deviation.

When the slider is set fully to the left, non-repeating random values occur. As the slider moves from left to right, the chance of randomness decreases and the pattern begins to repeat without variation.

| MIDI | MOD |
|---|---|

### Navigation Tab
Select to view and edit the MIDI or Mod menu items.

# MIDI Tab

**OCTAVE**
0 %
−/+ ▼
≦ 12 st

**Octave Chance**
Sets the chance of deviation for incoming MIDI data.

**Octave Polarity**
Sets the direction of modulation:

Positive ( + )

Bipolar ( − / + )

Negative ( − )

**Octave Modulation**
Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

**Octave Range**
Sets the range of modulation. (12st to 48st)

---

**PITCH**
0 %
−/+ ▼
≦ 7 st

**Pitch Chance**
Sets the chance of deviation for incoming MIDI data.

**Pitch Polarity**
Sets the direction of modulation:

Positive ( + )

Bipolar ( − / + )

Negative ( − )

**Pitch Modulation**
Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

**Pitch Range**
Sets the range of modulation. (1st to 24st)

---

**SCALE**
0 %
♭# Inv
C Major

**Scale Chance**
Sets the chance that incoming MIDI notes will be quantized to the selected Key and Scale.

**Use Current Scale (Live 12+ Only)**
When enabled, the device's Key and Scale are synchronized with the Live Set's Key and Scale.

**Scale Invert**
Invert quantized MIDI notes to stay within the selected Key and Scale.

**Key and Scale**
Quantize incoming MIDI notes to the selected Key and Scale.

---

**VELOCITY**
0 %
−/+ ▼
≦ 50

**Velocity Chance**
Sets the chance of deviation for incoming MIDI data.

**Velocity Polarity**
Sets the direction of modulation:

Positive ( + )

Bipolar ( − / + )

Negative ( − )

**Velocity Modulation**
Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

**Velocity Range**
Sets the range of modulation. (10 to 127)

**DURATION**
0 %
−/+ ▼
≤ 250 ms

**Duration Chance**
Sets the chance of deviation for incoming MIDI data.

**Duration Polarity**
Sets the direction of modulation:

Positive ( + )

Bipolar ( − / + )

Negative ( − )

**Duration Modulation**
Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

**Duration Range**
Sets the range of modulation. (10ms to 2s)

**DELAY**
0 %
SYNC
≤ 1/16

**Delay Chance**
Sets the chance of deviation for incoming MIDI data.

**Delay Mode**
Select between two delay modes:

Time – An un-synced millisecond delay is applied to all incoming MIDI note-on and off messages.

Sync - A tempo-synced delay is applied to all incoming MIDI note-on and off messages.

**Delay Modulation**
Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

**Delay Range**
Sets the range of modulation. (1/16 to 1 or 20ms to 2s)

**RATCHETS**
0 %
F rise ▼
≤ 4x

**Ratchet Chance**
Sets the chance of deviation for incoming MIDI data.

**Ratchet Rate**
Sets the tempo relative speed of ratchets (slow or fast).

**Ratchet Envelope**
Apply a scaled velocity envelope over the ratchets:

Flat - no envelope applied.
Rise - a rising envelope from 0 to the input velocity.
Fall - a falling envelope from the input velocity to 0.
Random - a random selection of velocities.

**Ratchet Modulation**
Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

**Ratchet Range**
Sets the range of modulation. (2X to 16X)

**BEND**
0 %
−/+ ▼
≤ 10 %

**Bend Chance**
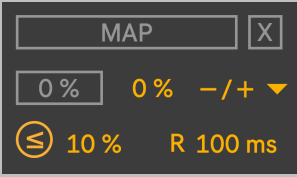Sets the chance of deviation for incoming MIDI data.

**Bend Polarity**
Sets the direction of modulation:

Positive ( + )

Bipolar ( − / + )

Negative ( − )

**Bend Modulation**
Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.

**Bend Range**
Sets the range of modulation. (0% to 100%)

This parameter is represented as a percentage because the pitch bend range is defined by your hardware or software instrument's pitch bend settings.

# MOD Tab

**Map**
Click on the button to enable map listening mode. The text will flash orange until you click on any mappable parameter in Live. All control of the parameter will be given to Model until it is released by the map clear button.

**Map Clear**
Confirm the release of the currently mapped parameter.

**Mod Value**
Sets the center value for the modulated parameter.

**Mod Chance**
Sets the chance of deviation for incoming MIDI data.

**Mod Polarity**
Sets the direction of modulation:

Positive ( + )

Bipolar ( − / + )

Negative ( − )

**Mod Modulation**
Choose between two modes of deviation:

= - The deviation amount is set to a single value.

≤ - The deviation amount is less than or equal to the assigned value.
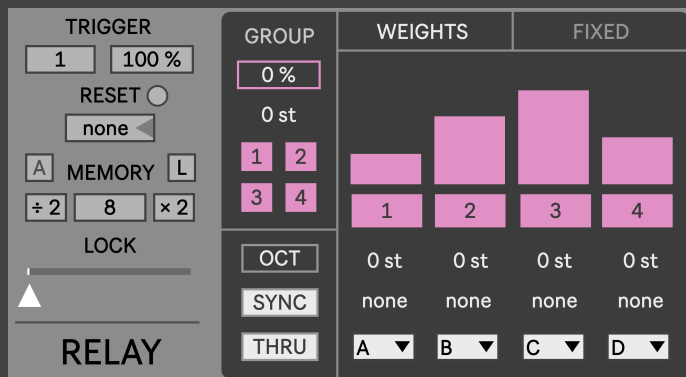
**Mod Range**
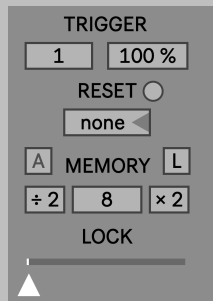Sets the range of modulation. (0% to 100%)

**Mod Ramp**
Sets the time (in milliseconds) it takes modulated parameters to reach their destination value.

# MODULATORS

## RELAY

An advanced switcher that sends MIDI note information to four assignable output ports based on stochastic weights. This data can be received on any MIDI/Instrument track in your Live Set when paired with the HUB utility device. Each output port has independent octave and delay controls for deeper control and variation. A separate group channel with chance based activation joins together your instruments for fuller textures. Also features a pattern soft lock and fixed mode for more predictable output assignments

### Trigger Interval
Determines how many incoming MIDI notes will be processed by the device.

For example: A setting of 2 would only allow every other incoming MIDI note to be potentially triggered and deviated.

### Trigger
Sets the chance that incoming MIDI notes will be triggered and processed by the other deviation parameters.

### Reset Interval
Select an interval (in quarter note beats) for automatically resetting the memory buffer to the first step.

If "bar" is selected, the buffer will reset on every downbeat of Live's current time signature setting.

### Clip Learn
Automatically matches the memory buffer size to the number of notes in the currently playing clip slot on Deviate's track.

### Auto Pattern Length
Automatically resizes the patten length to match the total number (sum) of all repeats generated while in Fixed mode. Memory Buffer Size

Sets the size of the memory buffer. Every incoming MIDI note takes up one space in the buffer.

### Half and Double
Halves or doubles the current pattern size. If the current pattern is an odd length, the halved value is rounded.

### Lock
Provides global control over the amount of randomness for each probabilistic parameter.

When the slider is set fully to the left, non-repeating random values occur. As the slider moves from left to right, the chance of randomness decreases and the pattern begins to repeat without variation.
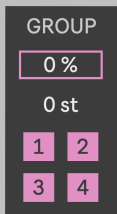
**GROUP**
0 %
0 st
1  2
3  4

**Group**
Sets the chance that MIDI output is sent through the group channel.

**Group Octave**
Transpose the MIDI output on the group channel by the selected octave.

**Group Assign**
Assign ports to the group channel. Ports that are disabled in the Weighted or Fixed mode can still be used when assigned to the group.

| WEIGHTS | FIXED |
|---------|-------|

### Navigation Tab

Choose between two modes of operation: <u>Weights</u> - Output ports are selected based on chance.

<u>Fixed</u> - Output ports are selected based on a predictable order.

1  2  3  4

### Weights

Controls the chance of the active output port. The higher the slider value, the more likely that port will be triggered.

> | < | >< | ?

REPEATS

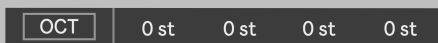| 1 | 1 | 1 | 1 |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

### Fixed Order

Set the direction of playback in Fixed Mode (forward, reverse, forward/reverse, and random).

### Repeats

Select the number of times a port is active before moving on to the next step (Fixed Mode only).

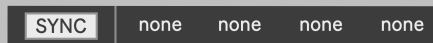| OCT | 0 st | 0 st | 0 st | 0 st |
|-----|------|------|------|------|

### Pitch Mode

Select from two modes of pitch manipulation:

Octave - restricts pitch transpositions to octaves only.

Pitch - allows for all chromatic pitch transpositions.

### Octave/Pitch

Transpose the MIDI output by the selected octave or pitch.

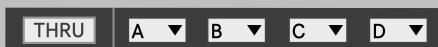| SYNC | none | none | none | none |
|------|------|------|------|------|

### Delay Mode

Select between two delay modes:

Time - An un-synced delay time in milliseconds is applied to all incoming MIDI note-on and off messages.

Sync - A tempo-relative delay time is applied to all incoming MIDI note-on and off messages.

### Delay Time

Set the MIDI output delay in tempo-relative or millisecond values.

| THRU | A ▼ | B ▼ | C ▼ | D ▼ |
|------|-----|-----|-----|-----|

### Thru

Allow incoming MIDI messages to pass through the device.

### Output Ports

Assign the Output Port to send MIDI messages to other SEEDS devices throughout your Live Set.

# UTILITIES

## HUB



A MIDI sender/receiver utility device that connects with the various SEEDS clock devices, sequencers, and modulators. Features a filter menu to enable and disable different categories of MIDI data from being sent or received.
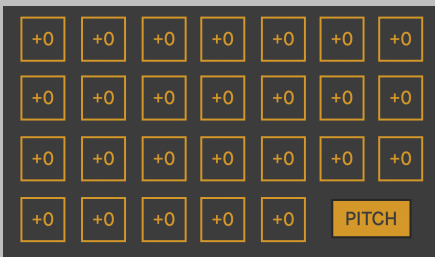
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**Thru**
Allow incoming MIDI messages to pass through the device.

**Receive A-Z**
Enable ports to receive MIDI data on the device.

**Send A-Z**
Enable ports to send MIDI data out of the device.

**Receive Pitch A-Z**
Apply a pitch shift offset to the incoming MIDI notes before they are output.

**Send Pitch A-Z**
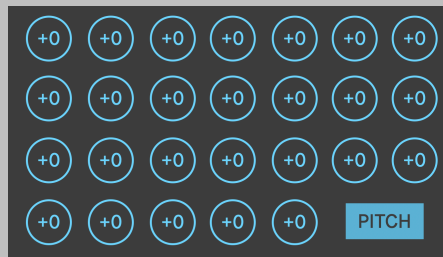Apply a pitch shift offset to the MIDI notes before being sent out of the device.

**Receive Filter**
(Notes, Control Changes, Pitchbend, Aftertouch)
Select which types of MIDI messages to receive into the device.

**Send Filter**
(Notes, Control Changes, Pitchbend, Aftertouch)
Select which types of MIDI messages to send out of the device.

# UTILITIES

## SELFIE



As the name suggests, this device saves a snapshot of all currently active SEEDS devices in your Live Set. Presets are managed easily with simple save, copy, and delete controls. More advanced features include the ability to load presets with MIDI notes, and a hard sync feature that forces all SEEDS sequencers to jump to the first step when a stored preset is recalled.



**Thru**
Enable incoming MIDI data to pass through the device.

**Hub Input**
Select a Hub port to receive MIDI information. MIDI note-on messages (C1 to Eb6) will trigger presets 1 through 64.

**Save**
Saves the current selected preset. Warning: this will overwrite any currently stored presets in the destination slot.

**Sync Preset**
When sync is enabled, all SEEDs devices in the Live Set will be resynced (i.e. start from step 0 for sequencers) every time a new preset is selected.

**Copy**
Enables copy mode. The current preset will be copied to any new preset selected while this button is engaged.

**Delete**
Enables delete mode. Any preset selected while this button is engaged will be deleted.

**Push**
Enables a custom grid layout available for all Ableton Push controllers (see the next page). This parameter is inactive if no device is connected to the system.
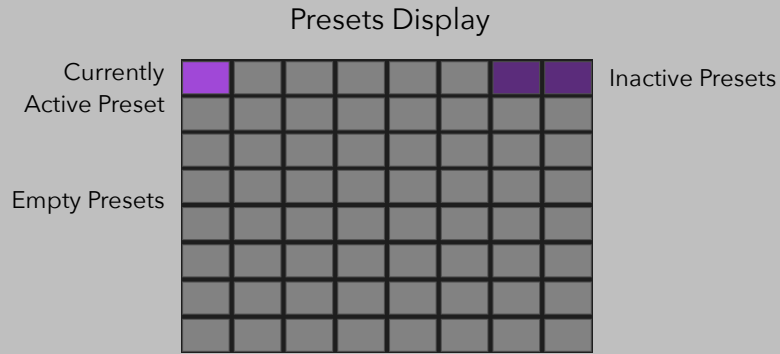


**Filter Presets**
Determines if the device will be included in a stored preset. This filtering setting can be changed dynamically and stored for each of the 64 presets.



**Presets**
Select a preset to load, save, or delete. All SEEDS device parameters in your Live Set can be stored and recalled by SELFIE, except:

- Mod mappings

- Input, output, and thru settings (including Hub port assignments)

- Random values generated for deviations and probability-based parameters.

# SELFIE Custom Push Layout

Presets Display

Currently
Active Preset

Inactive Presets

Empty Presets

To copy a preset to another preset slot:
1) hold down the preset you want to copy for two seconds
2) the pad will flash, indicating that a copy operation is ready
3) select the destination preset slot

To delete a preset:
1) hold down the shift button
2) select the preset slot to be deleted

To save a preset:
1) hold down the shift button
2) select the preset slot to be saved