JPLab

Musical Composition x Modular Generation

by Path Set and Joop van der Linden

Manual v2.0 - Rev 7b

Our Story

JPLab is **J**oop and **P**ath's **Lab**oratory for mixing composition techniques with modular aesthetics.

Harness sequencers that can react to your melodies like a jazz musician improvising on compositions.

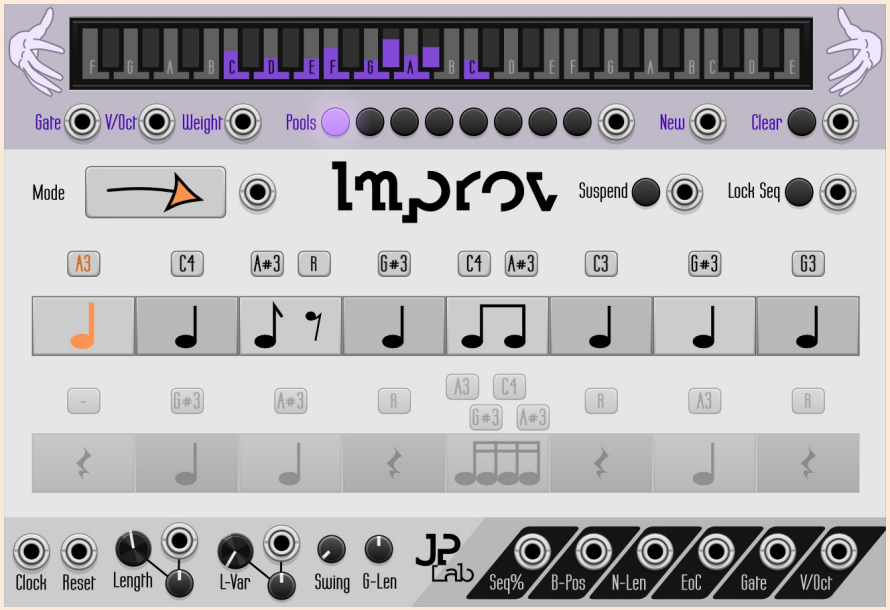
Blend rhythmic subdivisions with weighted note pools to author or randomize rich melodies that mutate over time.

Your companion awaits...

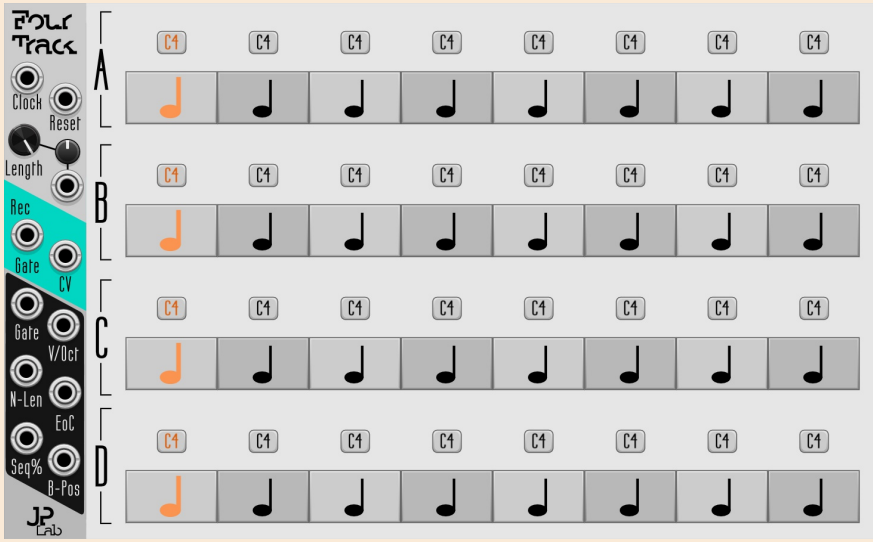
Modules

JPLab has three main sequencers:

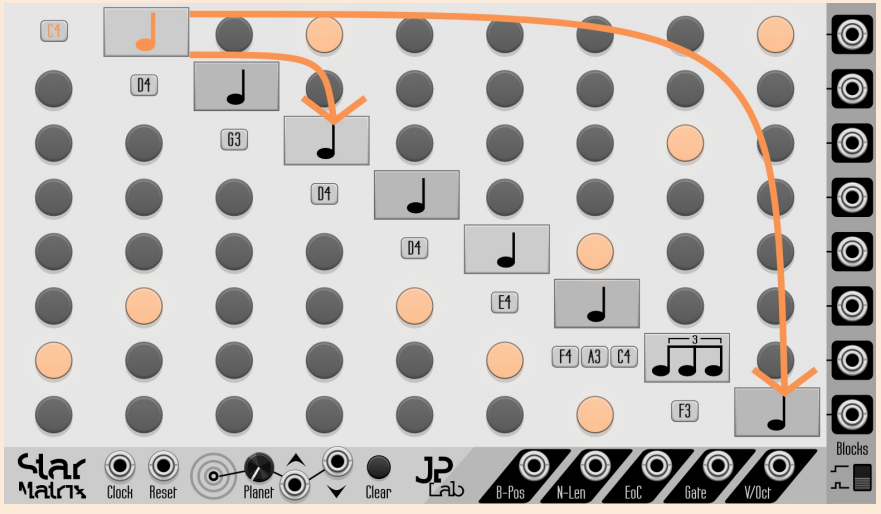
Improv – Instantly responding sequencer to notes added through the keyboard or CV inputs. Page 16 to 22.



Four Track – Program 4-voice melodies or chords. Page 9 to 15.



Star Matrix – Fully control transition chance between any note block. Page 23 to 26.

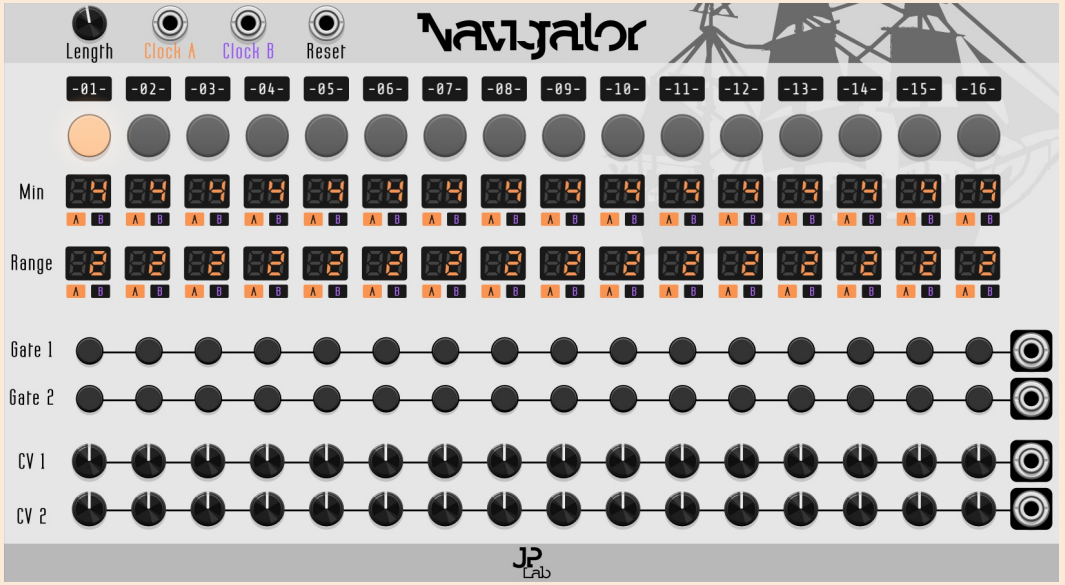


Modules

JPLab also has an expander and utility module:

Counter Point – Expander for any main JP sequencer. Creates an extra voice using delay, regression and inversion. Page 27 to 28.

Navigator – An event sequencer of 16 steps, each with two gates and two CVs. Precisely control the length of each event or add randomness. Page 29 to 30.



Tip: Use Counter Point on any JPFree sequencer!

Common: Note Things

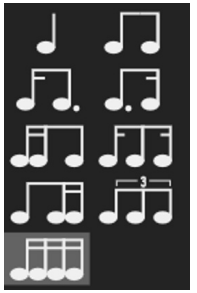
Tip: These concepts apply to all main sequencers in JP plugins.

Note Pool

These are the notes the sequencer uses. Left click to add a note. Right click to remove it. Each note has a weight you can set by clicking and dragging the note. The weight controls how frequently the note appears when CV is randomized.

Note Block

One beat of the sequence. Each note block can contain up to four notes in one of nine different subdivisions. Left click to cycle forward through the options. Shift + Left click to cycle backwards. Right click to see all options and select one.

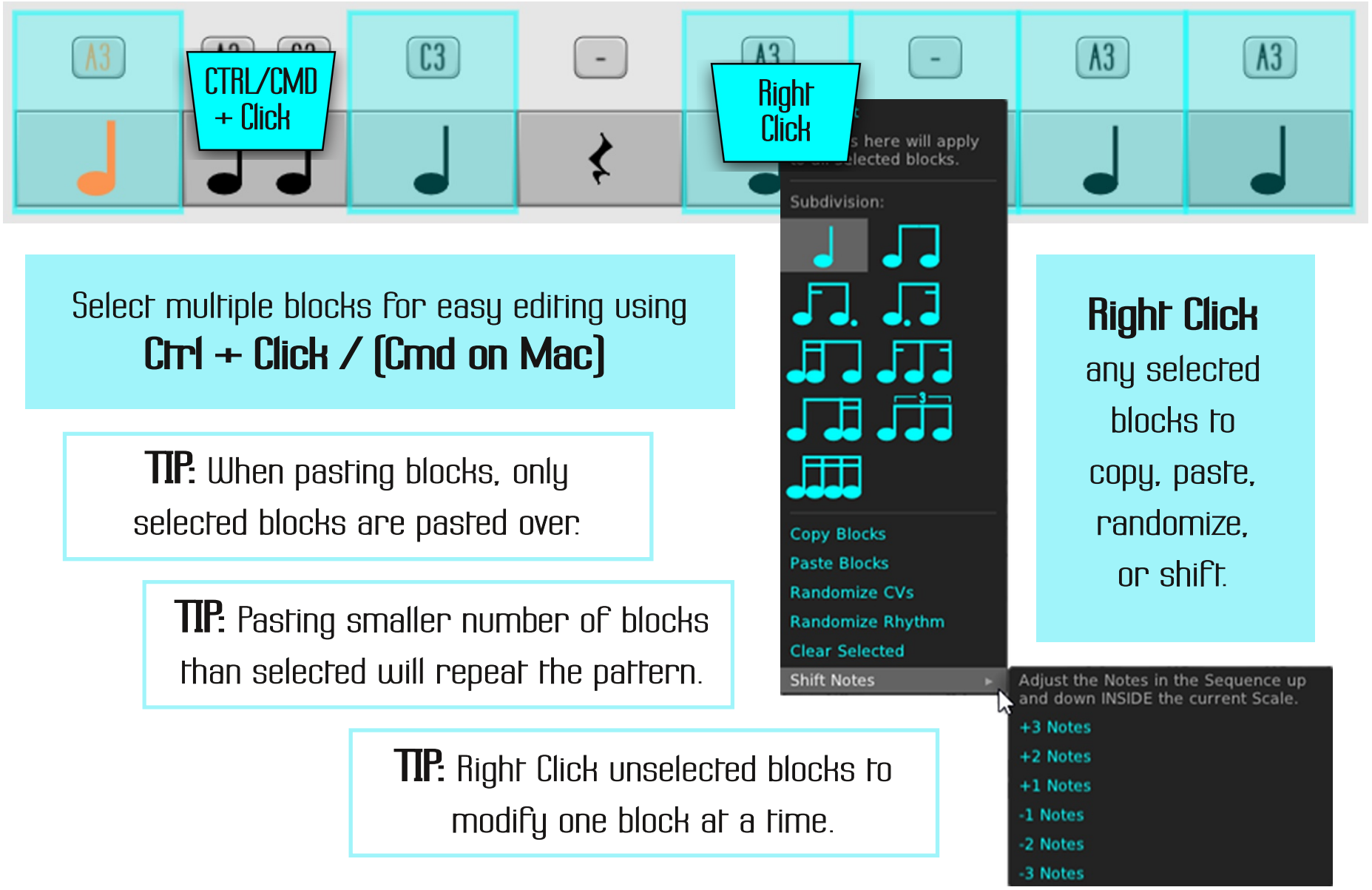


Note Button

Each note in the sequence has a note button. Click to bring up a keyboard where you can select a note. Use the slider at the top to set microtonal notes. You can also add Rests and Ties. Ties can only be set on the first note in a block. Rests can also be set directly by shift clicking a note button. Finally there is an Auto Advance button that you can use for quick note entry.

Common: Bulk Selection

Tip: Copy and paste between any main sequencers in JP plugins.



Select multiple blocks for easy editing using **Ctrl + Click / (Cmd on Mac)**

Right Click any selected blocks to copy, paste, randomize, or shift.

TIP: When pasting blocks, only selected blocks are pasted over.

TIP: Pasting smaller number of blocks than selected will repeat the pattern.

TIP: Right Click unselected blocks to modify one block at a time.

Common: Clock Mode

Gate Mode

In this mode the input clock is expected to be a consistant square wave with a peak of 2v+ and a vally of 0v. Each full cycle of the clock one whole note block is played.

If an inconsistant clock is used the modules will do their best to keep up, but will likely be a few cycles behind.

The duty cycle of the square wave is ignored.

Tip: To avoid skipping the first note block, use Impromptu Clocks and turn on On Start > Send Reset Pulse.

Phase Mode

In this mode the clock input is expected to be a triangle wave from 0v to 10v. Other signals that are similar to a triangle wave can create interesting rhythms and clock lengths.

Note that in order for the note block to advance, the input signal has to drop from above 9v to below 1v in a single frame.

Common: Right Click Menu

Clock Settings - Alternative way to set the Gate Length and Swing for the module.

Clock Settings

- **Gate Length** - How long each **Gate** output is high.
- **Swing** - Add swing to each Note Block.
- **Clock Mode** - Switch between a typical clock and a phase clock.

Randomize - Allows you to randomize CVs or Rhythm of the sequence.

Shift & Shuffle - Allows shifting and shuffling of the sequence. Behavior is similar to Shift & Shuffle expander.

Set Rhythm - Sets every note block to the same subdivision.

Note Pool - Set or Edit the note pool.

- **Custom** - Set note pool using a keyboard.
- **Shift** - Shift notes by semitones.
- **Randomize** - Randomize the note pool.

The remaining options are presets.

Copy/Paste - Portable Copy and Paste

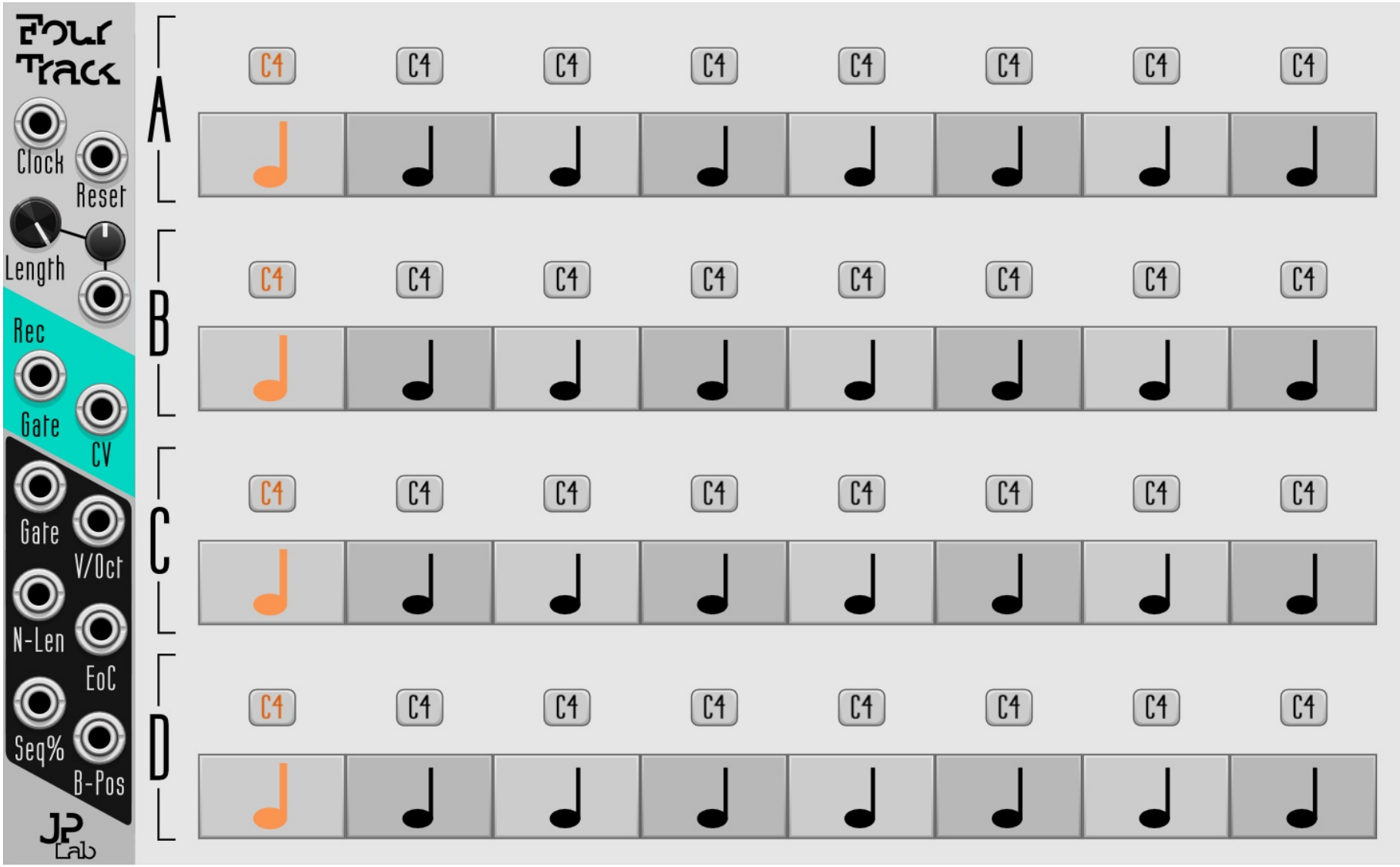
- **Sequence** - Copy and Paste sequences between any JPLab sequencers and other sequencers supporting the portable format.

  These are interoperable with the bulk selection's copy and paste tool as well.
- **Note Pool** - Copy and Paste the current note pool between any JPLab modules.

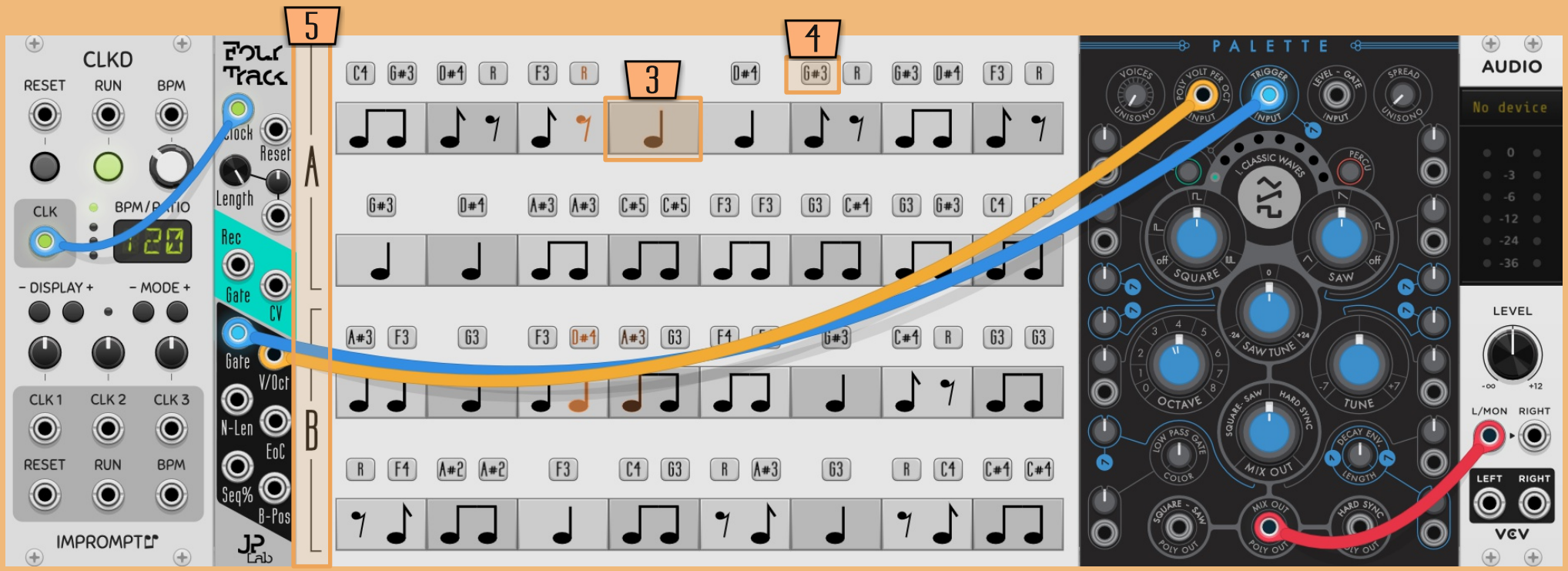
Expanders - Easy way to add expanders.

Four Track

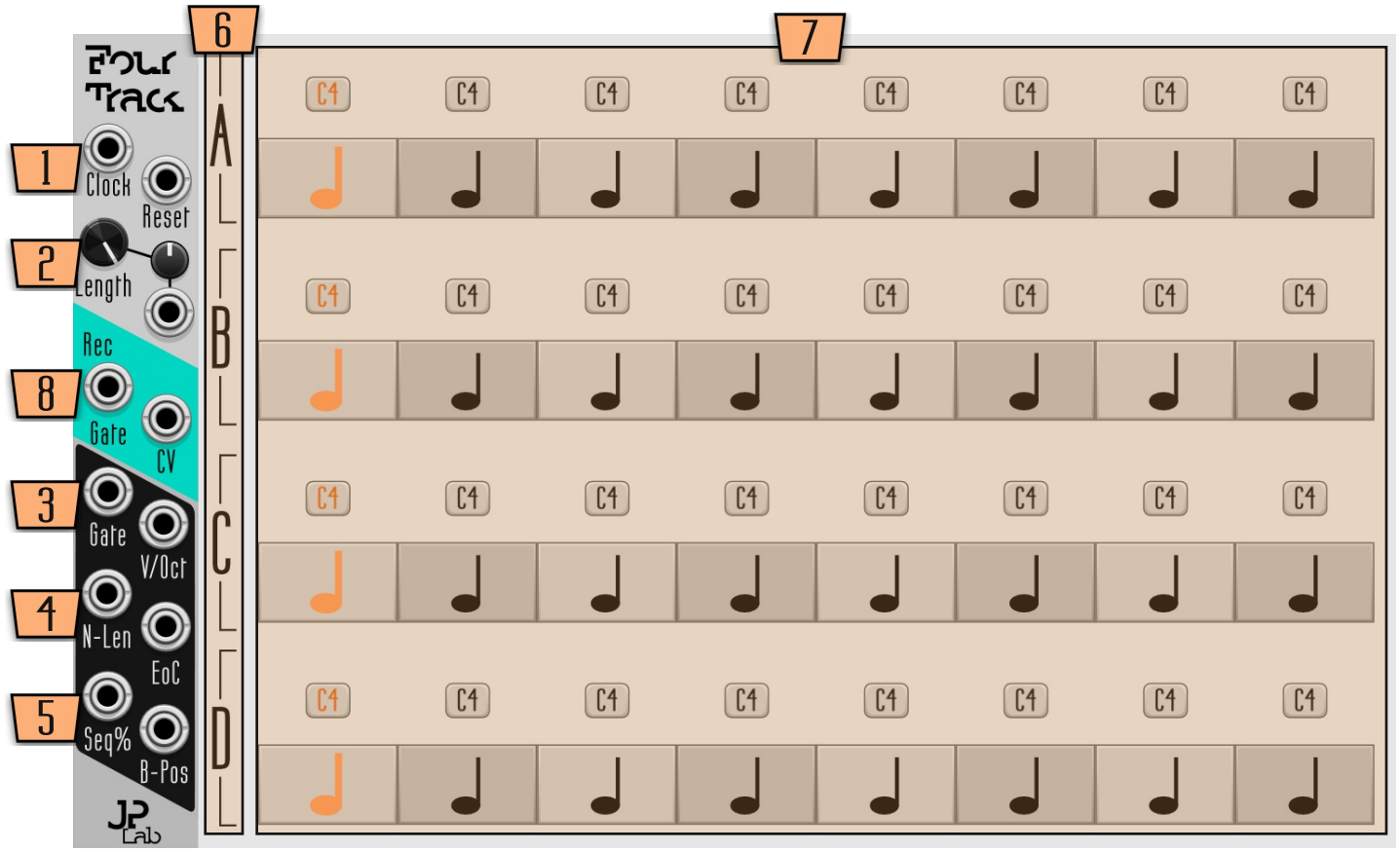
Program 4-voice melodies or chords. Add endless expanders for endless length.



Four Track Quick Start



1. Add Modules: Impromptu's **CLKD**, JPLab's **FourTrack**, Atelier's **PALETTE** and VCV's **AUDIO**.
2. Connect Modules as shown above.
3. Click a **quarter note** to change its rhythm.
4. Click a **note letter** to change the pitch.
5. Click Track Configuration until just A and B show.



1. **Clock** – Advances one Note Block.
   Reset – Resets to first Note Block.

2. **Length** – Controls the number of Note Blocks active in the sequence. CV range is 0v-5v.

3. **V/Oct** – Volt/Octave signal for the current tracks. Polyphony if more than one track is configured.
   Gate – High when a note is playing. Polyphony if more than one track is configured.

4. **Note Length** – Outputs the length of the note that is currently playing. Range is 0v-10v. Polphony if more than one track is configured.
   EoC – End of Cycle gate.

5. **Sequence Percent** – Increases from 0v to 10v over a whole cycle.
   Block Position – Increases from 0v to 10v over a single block.

6. **Track Configuration** – Click to change number of tracks. More details on page 12

7. **Note Blocks** – 32 Note Blocks.
   (Shift) Left click a block to change the rhythm.
   Click a note to set value. Click and drag to set voltage.

8. **Extra Mode** – Click the label to change between Record and Addressable. This changes what the CV and Gate inputs do. More details on page 13.

Track Configuration

Click the Track Configuration strip on Four Track to change which rows are part of which tracks.

A B C D - Each row is a track.

A A B C - The first two rows form Track A. The third row is track B and the fourth row is Track C. Tracks B and C each play twice each cycle.

A A B B - The first two rows are Track A. The last two rows are Track B.

A A A B - The first three rows are Track A. The last row is Track B. Track B plays three times each cycle.

A A A A - All four rows are Track A.

Chord Mode - Each column is a chord. Each row is forced to have the same subidvisions. In Record mode, a 4-channel polyphonic input is expected.

Tip: Clock, Reset, CV, & Gate all accept polyphonic cables. One channel per track.

Extra Mode

Record Mode

CV and Gate are used to program notes into the sequence. Ideal for use with MIDI-CV to allow programming with a MIDI controller.

CV - Connect to V/Oct of MIDI or another voltage source. This value is recorded each time Gate is high.

Gate - Signals when to record the CV value and advance to the next selected note for writing.

Addressable Mode

Activate any note block of the squencer using CV. The next Clock input will trigger the note block to play.

CV - Sets the next block to be played. Every 12 Blocks is 1V of CV. This allows easy MIDI control. If using another sequencer instead, you can type in values using "Block/12" to get the right voltage.

Gate - **Optional**. If connected, this will override the output gate, allowing you to play a note as long as you wish. Repeated inputs replay the same note.

Right Click Menu

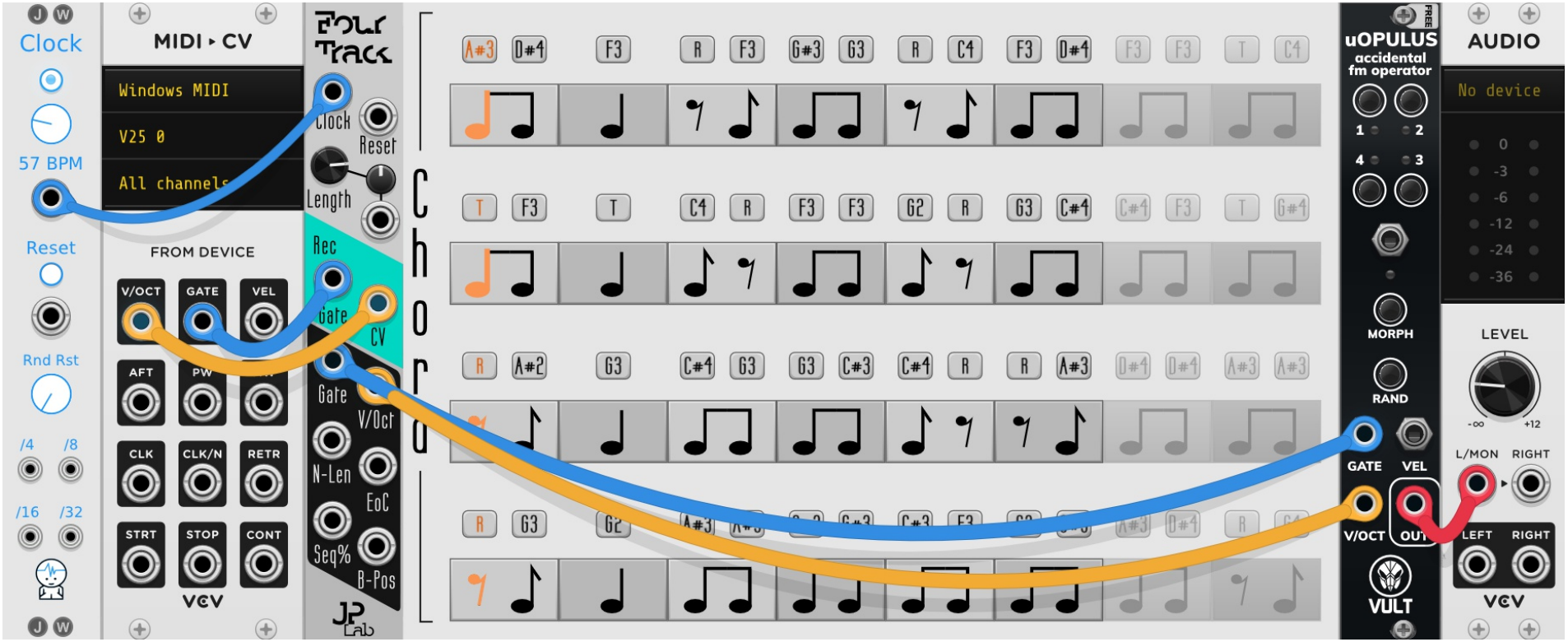
In addition to the common right click menu options found on page 8, Four Track has the following specific options:

Chord Mode - Quick way to set Track Configuration to Chord Mode.

Extra CV & Gate Mode - Another way to set the Extra Mode described on the previous page.

Expanders - Add a Four Track Specific expander that extends the number of notes in the sequence.

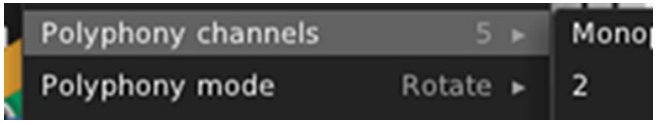
Example 1: MIDI Input



Four Track can be controlled using a MIDI device as shown above. Play one to four notes at a time to write them into the sequence as a Chord.

In this example FourTrack is In Chord mode. In Chord Mode a 4-channel polyphonic input is expected and is used to record all four tracks at once.

Don't forget to increase the Polyphony Channels on the MIDI CV Module using the right-click menu.

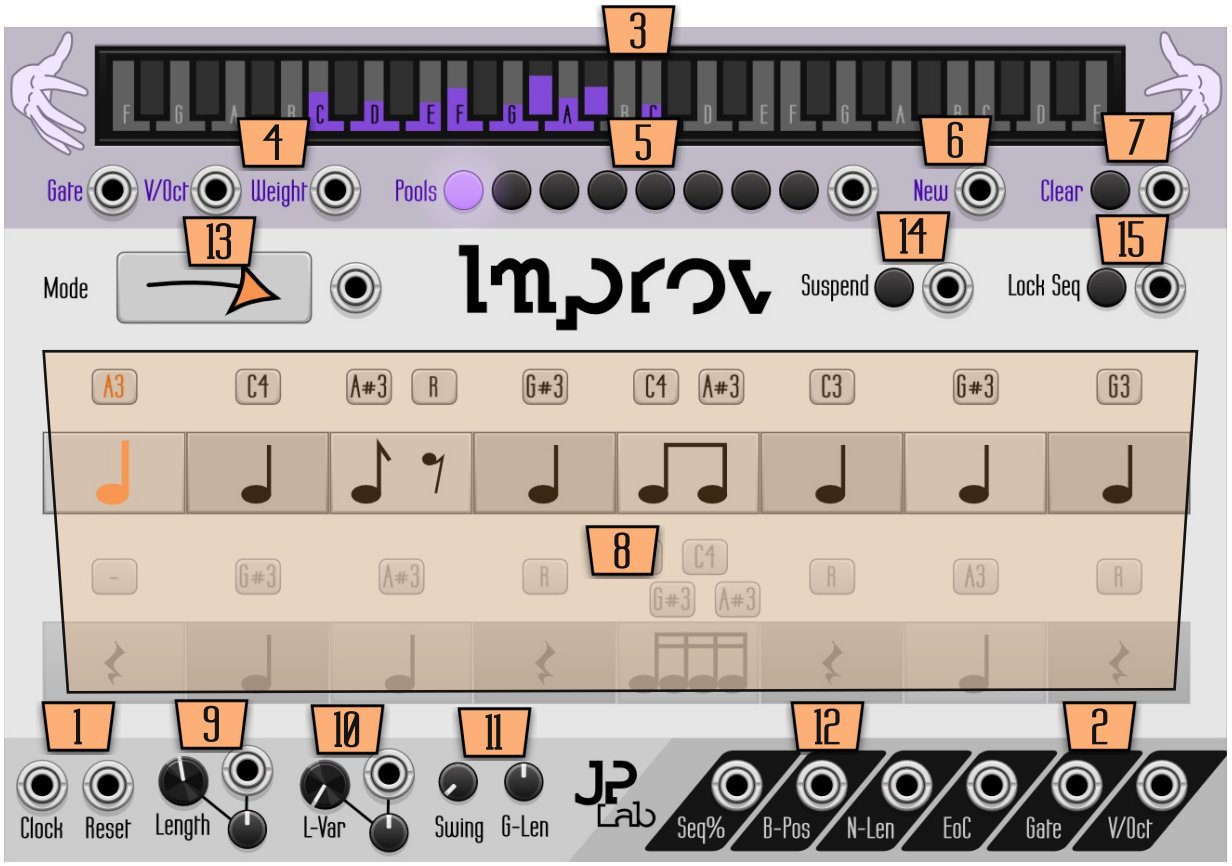


Improv

Jazz inspired live performance sequencer. Responds instantly to changes in notes.

Improv Quick Start

1. Add Modules: Impromptu's **CLKD**, JPLab's **Improv**, Atelier's **PALETTE** and VCV's **AUDIO**.
2. Connect Modules as shown above.
3. On Improv's Keyboard, click and drag to set weights.
4. Click a **quarter note** to change its rhythm.
5. Click a **note letter**, then click Rest to add a rest back.



1. **Clock** – Advances one Note Block.
   Reset – Resets to first Note Block.

2. **V/Oct** – Volt/Octave signal for the current note.
   Gate – High when a note is playing.
   EoC – End of Cycle gate.

3. **Note Pool** – Click a note on the keyboard to add/remove it from pool and sequence. Drag up/down to add more or less of that note.

4. External Keyboard inputs. Add or remove notes to the pool. When **Gate** is high, add/remove **CV** & **Weight** to the Note Pool. Supports polophony. **Weight** is optional & controls how many are added.

5. **Note Pools** – Store 8 note pools. Buttons select active note pool. Click again to randomize sequence. CV selects note pool. 1v–1.99v selects pool 1, etc.

6. **New** – Triggers a new random melody using the current note pool.

7. **Clear** – Button and CV trigger to clear current pool and sequence.

8. **Note Blocks** – 16 Note Blocks.
   [Shift] Left click a block to change the rhythm.
   Click a note to set value. Click and drag to set voltage.

9. **Length** – Controls the number of Note Blocks active in the sequence. CV range is 0v–5v.

10. **Length Variaton** – Adds chance of change in sequence length each cycle. CV range is 0v–5v.

11. **Swing** – Add swing to each Note Block.
    Gate Length – How long **Gate** output is high.

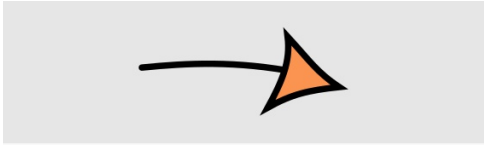
12. **Sequence Percent** – Increases from 0v to 10v over a whole cycle.
    Block Position – Increases from 0v to 10v over a single block.
    Note Length – Outputs the length of the note that is currently playing. Range is 0v–10v.

13. **Play Mode** – Click to change order Note Blocks are played in. CV range 1v–7v, 1v/mode.

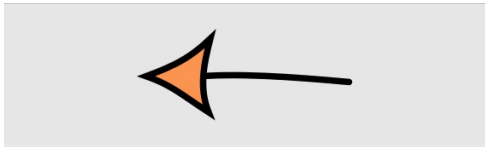
14. **Suspend** – When active, changes to the note pool don't apply to the sequence.

15. **Lock Sequence** – When active, sequence will be remembered when changing between active note pools.

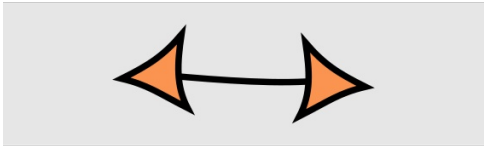
Play Modes



Forward - Blocks play in order, left to right on first row, then left to right on second row.



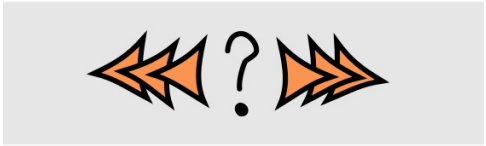
Backward - Blocks play in the opposite order as Forward.



Ping Pong - Alternates between forward and backward. Does not repeat the first or last block.

Semi-Random - 75% of the time acts like Forward. The other 25% of the time this acts like Full Random.

Random Walk - Randomly steps one block forward or backward.



Random Run - Randomly steps forward or backward. Step can be between 1 and 5 blocks, favoring shorter steps.

Full Random - Selects a random block each time. Reduced chance of selecting the same block twice in a row.

Right Click Menu

In addition to the common right click menu options found on page 8, Improv has the following specific options:

LVar Mode - Controls what effect LVar knob has on sequence length. See the next page for more details.

Fill Remaining Sequence - Randomly fills in all note blocks not active, using note blocks that are active.

Per Note Settings - Lets you store certain parameters per note pool, allowing those parameters to change when the note pool changes.

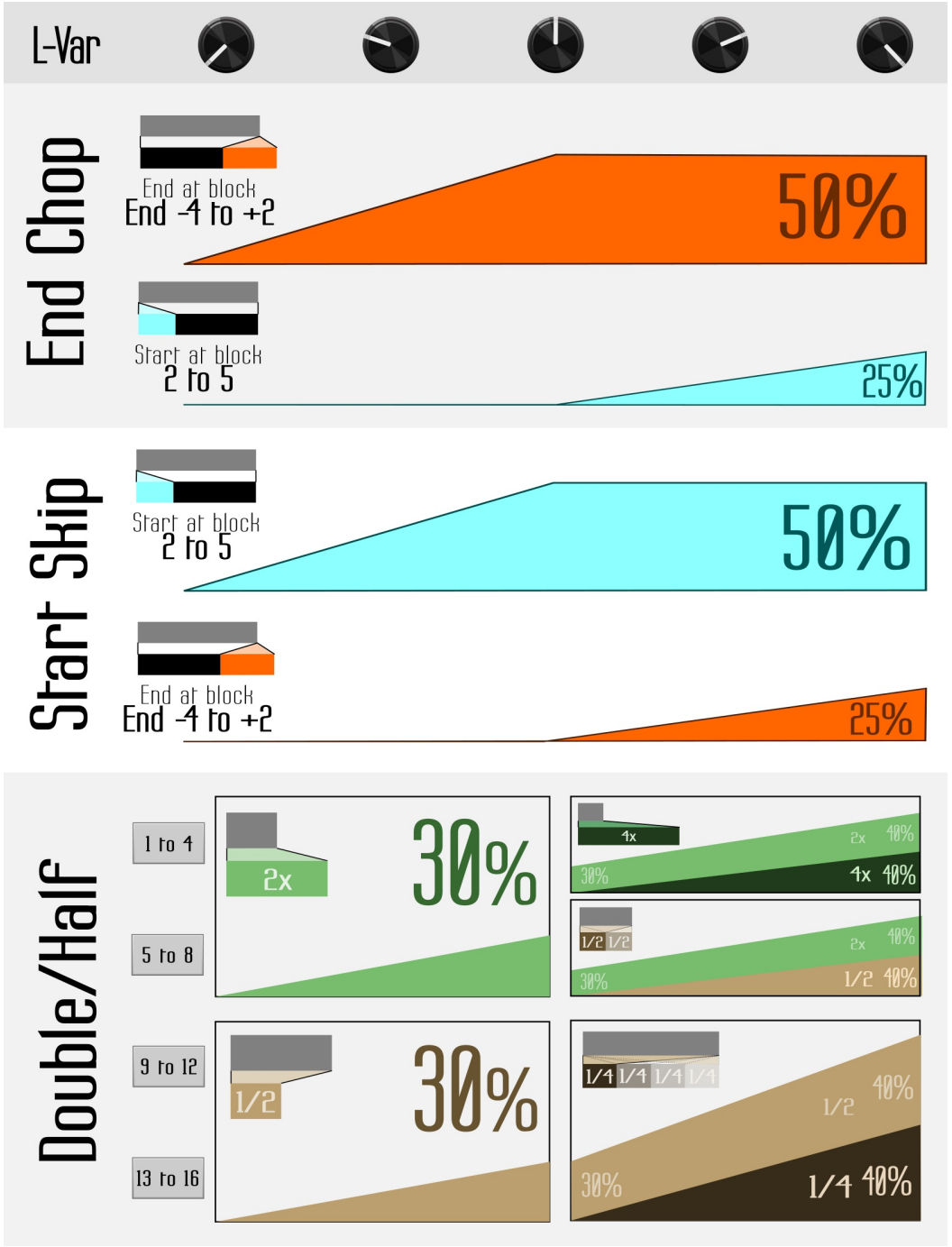
L-Var

L-Var - Adds a chance the length of the sequencer is different. LVar has three different modes accessable through the right click menu.

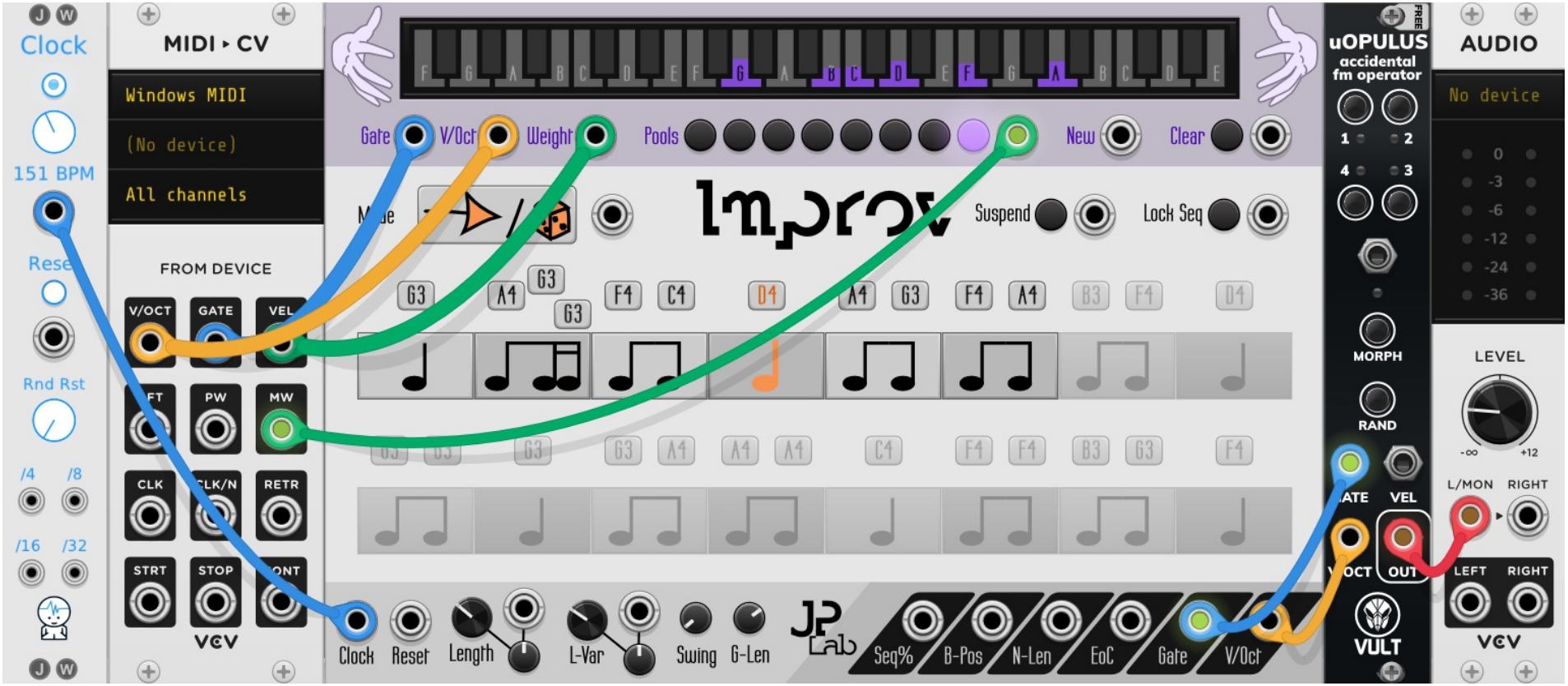
End Chop - In this mode the end of the sequence can be -4 to +2 note blocks long. Past 12 o'cock the Start Skip effect also has a small chance.

Start Skip - In this mode the sequence sometimes starts on the 2nd to 5th note block. Past 12 o'clock the End Chop effect has a small chance.

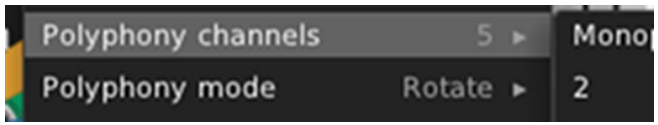
Double/Half - In this mode the length of the sequence can be doubled, halved, quartered or quadrupled.



Example 1: MIDI Input



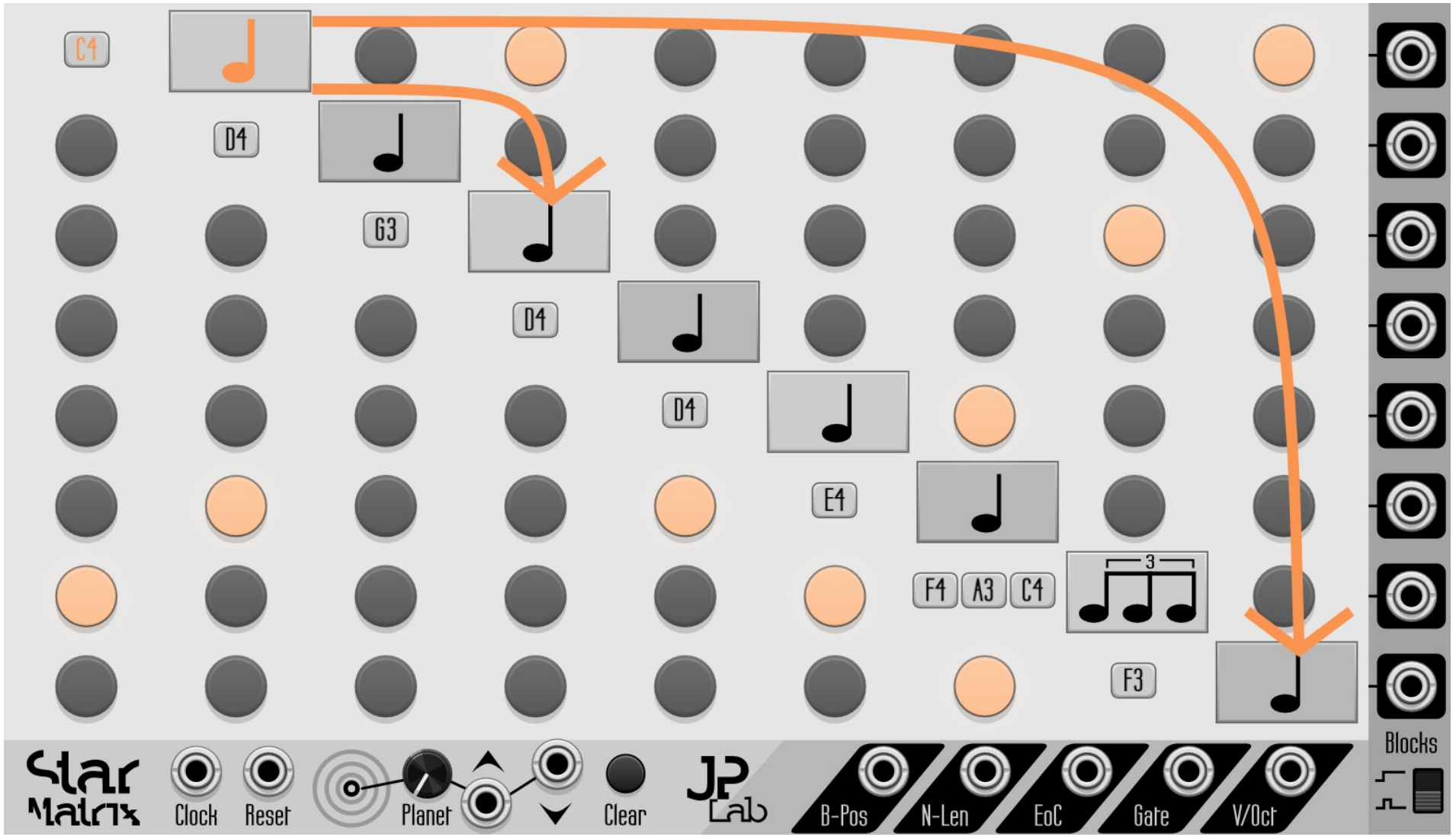
Improv can be controlled using a MIDI device as shown above. Notes played on the device are toggled in the current Note Pool. Use a CV knob or Mod Wheel to switch between note pools.



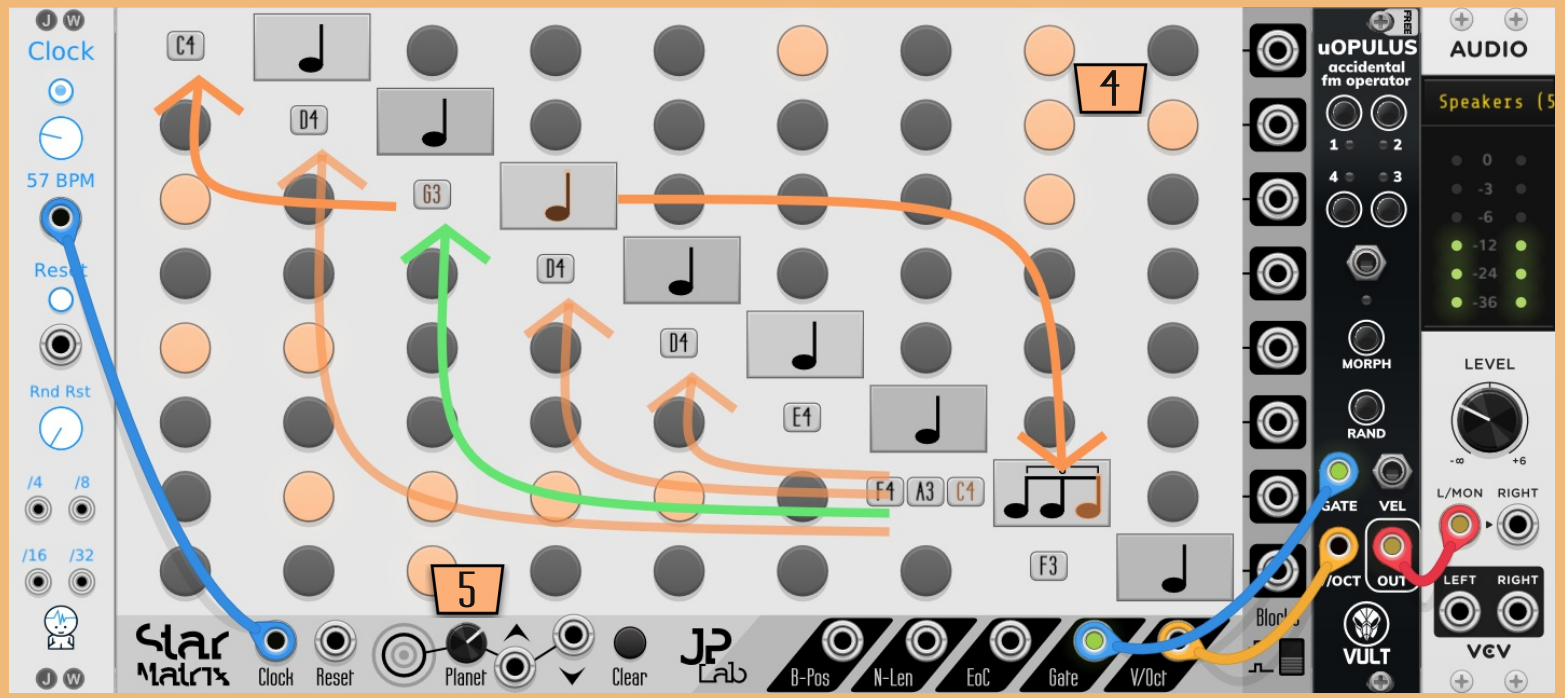
Don't forget to increase the Polyphony Channels on the MIDI CV Module using the right-click menu.

Star Matrix

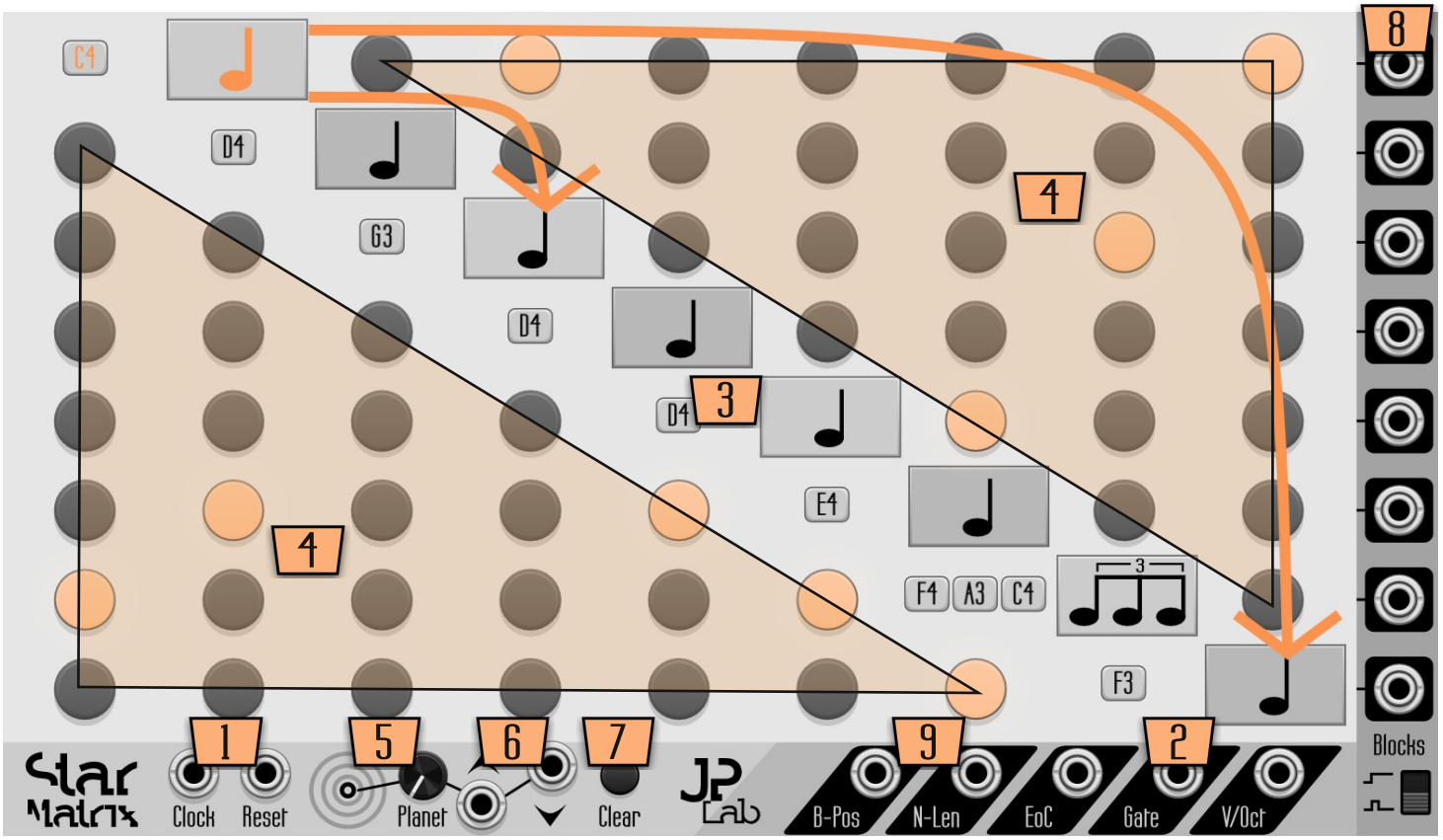
Fully control transition chance between any note block.



Star Matrix Quick Start



1. Add Modules: JW's **Simple Clock**, JPLab's **Star Matrix**, VULT's **uOPULUS** and VCV's **AUDIO**.
2. Connect Modules as shown above.
3. Randomize **Star Matrix**.
4. Click to toggle **transition**. Drag to change probability.
5. Cycle between four different pages or **Planets**.



1. **Clock** - Advances one Note Block.
   Reset - Resets to first Note Block.

2. **V/Oct** - Volt/Octave signal for the current note.
   Gate - High when a note is playing.
   EoC - End of Cycle gate.

3. **Note Blocks** - 8 Note Blocks.
   (Shift) Left click a block to change the rhythm.
   Click a note to set value. Click and drag to set voltage.

4. **Transitions** - Controls chance of moving from one note block to another. Mouse over to see which transition is controlled. Click to toggle. Drag to change probability.

5. **Planet** - Switch between four different sets of **transition** values. Click the diagram to cycle or use the knob to blend.

6. **Planet Up/Down Triggers** - Cycles to next planet when a gate is recieved.

7. **Clear** - Resets the current planet's **transitions**.

8. **Block Output & Mode** - Output Gate for each note block. In **Gate Mode** each output is high only when that block is active. In **Toggle Mode** each block output toggles between on and off when each note block becomes active.

9. **Block Position** - Increases from 0v to 10v over a single block.
   Note Length - Outputs the length of the note that is currently playing. Range is 0v-10v.

Right Click Menu

In addition to the common right click menu options found on page 8, Star Matrix has the following specific options:

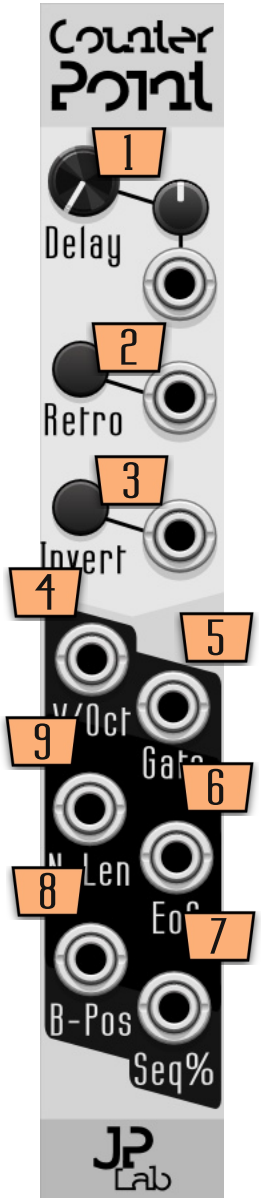
Transition Mode - Controls how the next note block is selected.

- **Chance** - In this mode each arrow's weight sets the probability of that transition happening. But the selected transition is random.
- **Cycle** - In this mode the order in which the transitions happen are consistant but the frequency at which it happens is determined by the weights. For example if a block has two outgoing transitions, one at 50% and one at 100%, the second transition will happen twice as often.

Arrow Display Mode - Controls when the arrow overlays are displayed

- **On** - If the cursor is not over a transition button, then arrows from the current block are shown. If the cursor is, then the arrow for that transition is shown.
- **Only Hover** - Arrows are only show when the cursor is over a transition.
- **Off** - Arrows are never shown.

Counter Point – Expander



Counter Point creates an extra voice by applying delay, regression, and inversion to the original sequence.

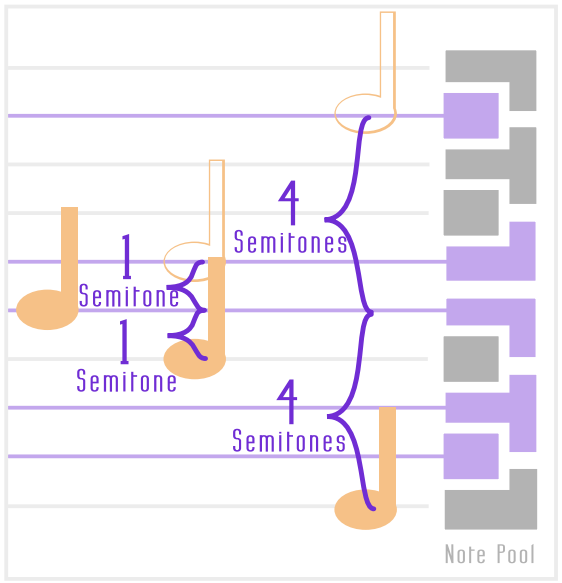
1. **Delay** – Delay output from 0 up to 256 Note Blocks. CV Range is 0v-5v when the attenuverter is at +100%.
2. **Retro** – Reverses order Note Blocks are played in. The size of the reversed section is equal to the **Delay**. The input trigger toggles the current state.
3. **Invert** – Inverts interval distance between subsequent notes. The input trigger toggles the current state.
4. **CV** – Volt/Octave signal for this voice.
5. **Gate** – High when a note is playing.
6. **EoC** – End of Cycle gate.
7. **Sequence Percent** – Increases from 0v to 10v over a whole cycle.
8. **Block Position** – Increases from 0v to 10v over a single block.
9. **Note Length** – Outputs the length of the currently playing note. Range is 0v-10v.

TIP: Try Multiple Counter Points!

Invert Mode

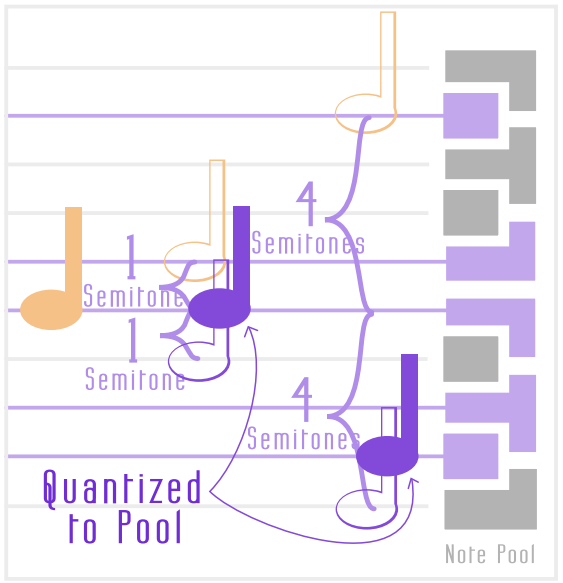
Counter Point has three diffrent modes for measureing interval distance. Change which mode is active from the right click menu.

Semitones



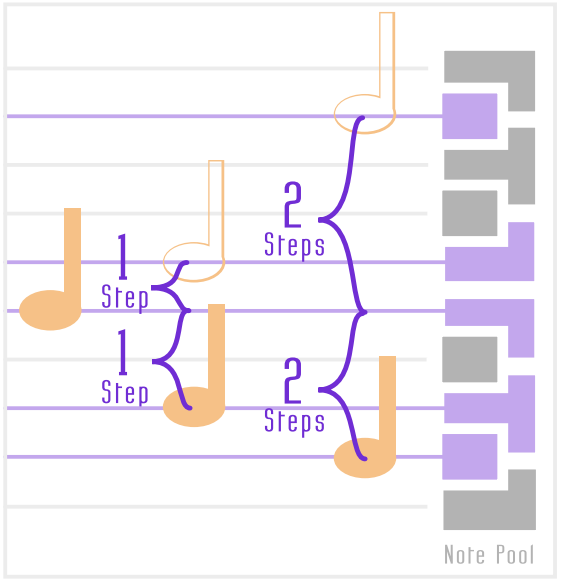
Distance is measured in Semitones.

Quantize



Distance is measured in Semitones. Then notes are quantized to the Note Pool.

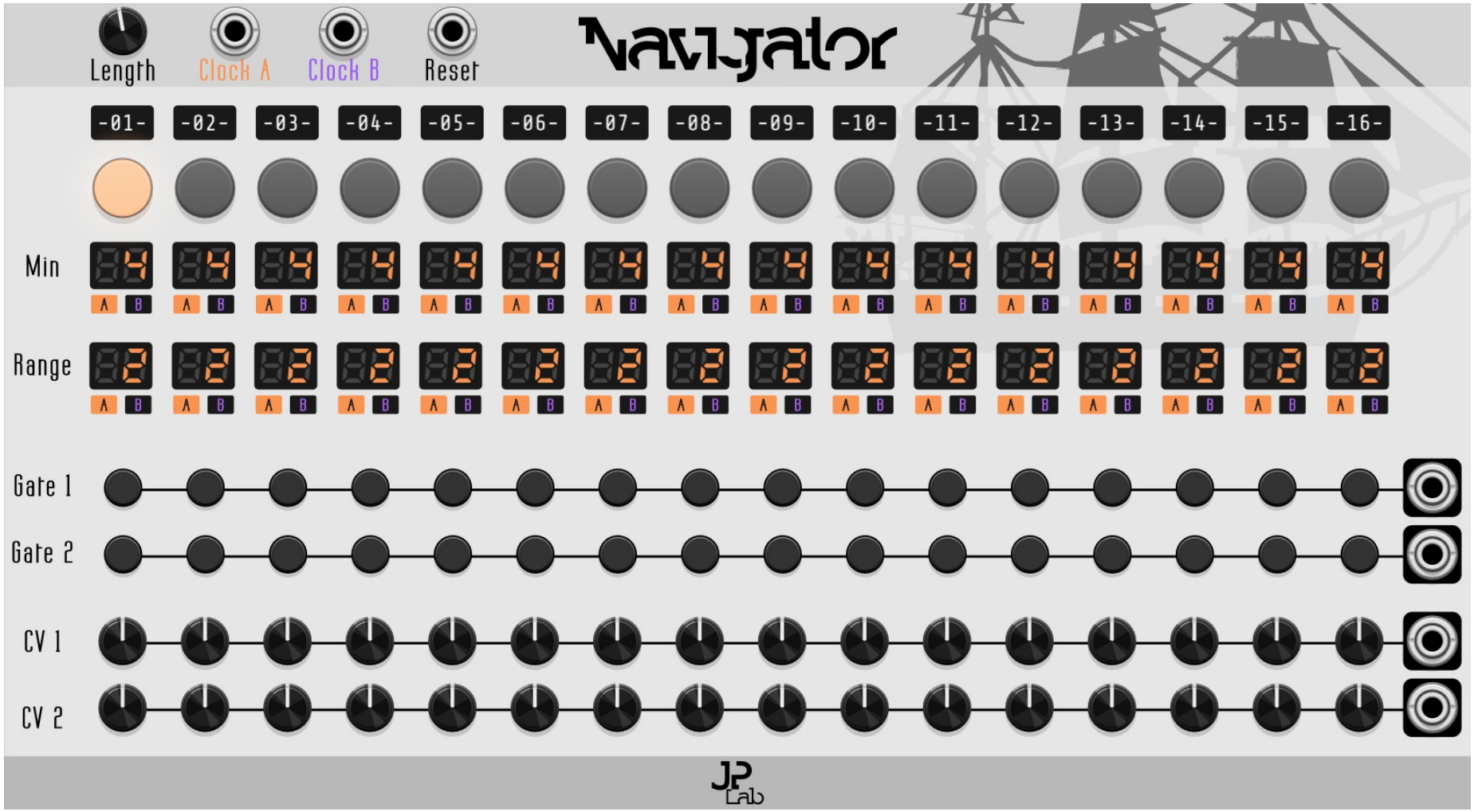
Steps

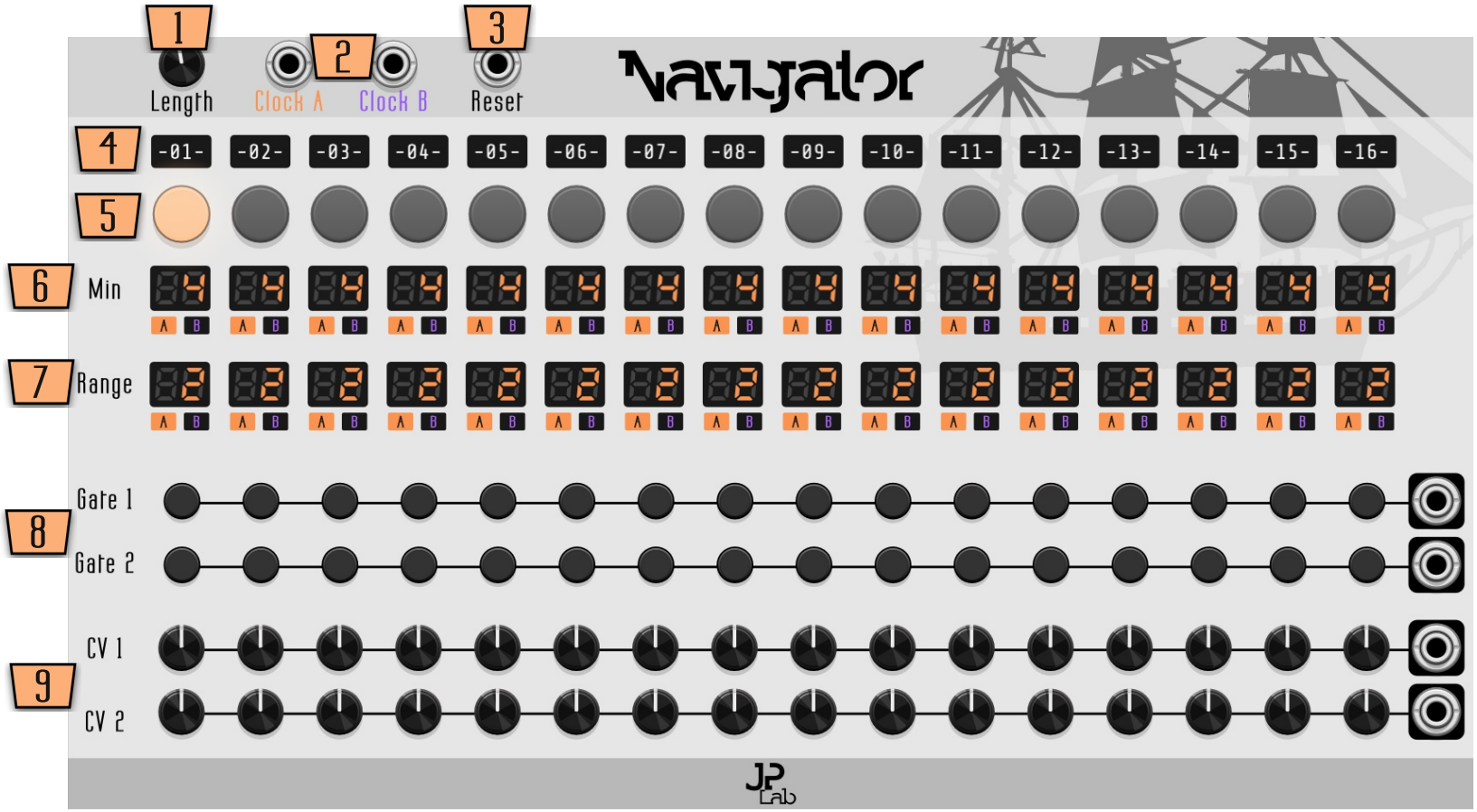


Distance is measured by steps in the note pool.

Navigator – Utility

Event squencer. Precisely control the length of each event or add randomness.





1. **Length** – Number of steps in the sequence.

2. **Clock A/B** – Two different clock inputs. Tip: Connect a slower clock to B and use A for beats and B for bars.

3. **Reset** – Resets the sequencer.

4. Optional label for each step.

5. **Step #** – Indicator and button for which step is active.

6. **Min** – Click and drag to set the min number of clock pulses a step will be active for. Use the A/B toggle to set which clock input is used.

7. **Range** – Click and drag to set the a number of extra clock pulses a step may take. This is in addition to the Min. Ex. Min of 4 and range of 2 means the step may last 4, 5 or 6 clock pulses. Set Range to 0 to make the step always have the same duration. Range has a dedicated A/B toggle, allowing you to have the range value be counted on a different clock from the min value.

8. **Gate 1/2** – Set which steps output a high gate on two independent gate outputs. Optionally delayed gates by 1 clock in the right click menu.

9. **CV 1/2** – Set CV values for each step on two independant CV outputs.

Links

JPLab

VCV Library Page

Manual - This PDF

JPFree

VCV Library Page

Manual

Path Set

Other VCV Plugins

Joop van der Linden

Spotify

Website