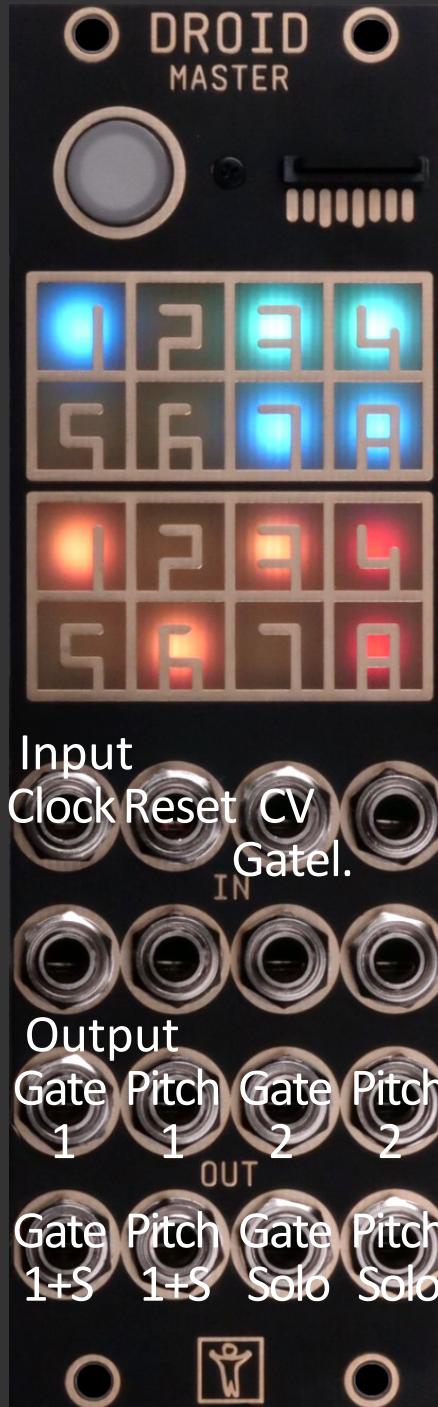


# Stochastic Melodies



Mute/  
Transpose/  
Pattern L.  
Fillorder/  
Branches  
Solo  
Presets



Probabilities/  
Loop/  
Envelope



1 2  
3 4  
5 6  
7 8

C. Activity



3 4  
5 6  
7 8  
9 10

↶ Dejavu / Morph ↷

## **Specifications:**

Patch name: Stochastic Melodies

Firmware: blue-3

System requirements: Droid master, 2x P2B8, 1x P10 (or similar)

Inputs: clock (I1), reset (I2), cv control for gate length (I3).

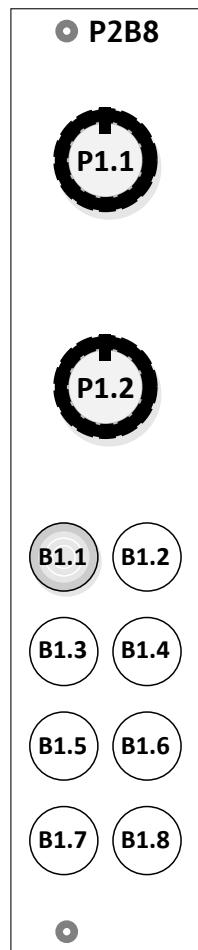
Outputs: gate (O1), pitch (O2), accent (O3), slide (O4)

This patch follows the idea of generative stochastic music. It features 3 voices, of which 2 are sequencer-based and can be run in free or looped mode, and 1 is a solo voice that can be triggered manually. The notes played are inferred from probabilities for pitch, octave and duration set by the user. For each voice, cv outputs are an ADSR envelope (gate) and a pitch. An additional output is provided as a combination of the first voice and the solo voice. Here the solo voice overrides the first voice, allowing to manually perform on the first voice and create instant variations.

### Features:

- Stochastic compositional control over melodic elements of 3 voices
- Unique experimental solo mode
- ADSR envelope for gate outputs
- Pattern length 1-16 steps
- Pitch transposition +/- 12 semitones
- Pattern variation via algoquencer parameters activity, morph, dejavu, fills, branches, offbeats and distribution
- Settings and melodies can be stored in 8 presets

## Mute/ Transpose/ Pattern L.



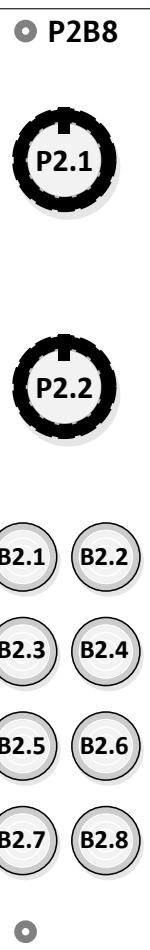
Transpose/  
Pattern length

Mute C.1

Mute C.2

Transpose  
down

Pattern  
length C.1



Unmute C.1

Unmute C.2

Transpose  
up

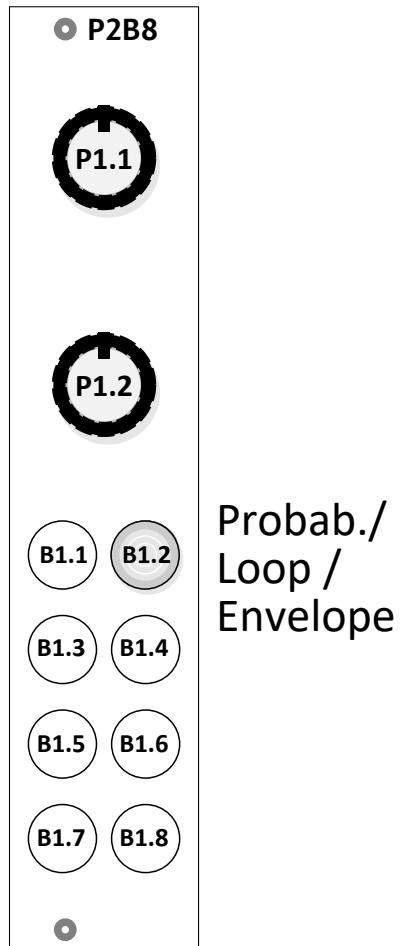
Pattern  
length C.2

### Menu 1: Mute / Transpose / Pattern length (B1.1)

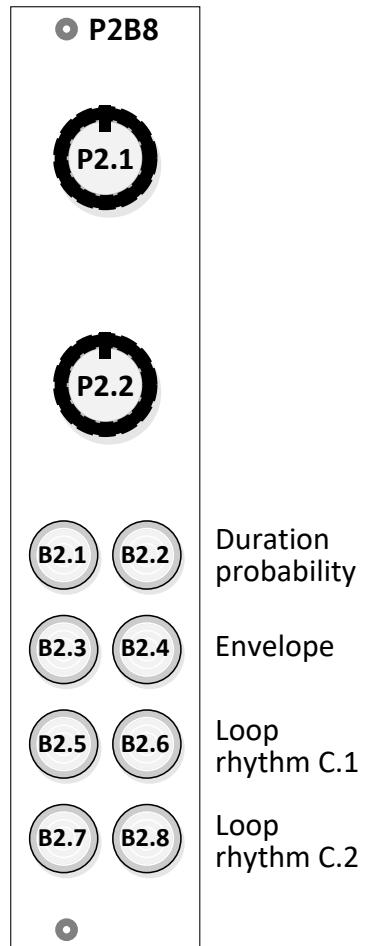
In any of the main menu pages, the progression of 4 bars is shown by leds L1.2, L1.4, L1.6, L1.8. Buttons B2.1 and B2.3 mute/unmute channels 1 and 2 instantaneously, whereas B2.2 and B2.4 unmute channels at the beginning of the next bar.

Channels can be transposed by 12 semitones up or down by holding buttons B2.5/B2.6 and turning pot P2.2. Up and down transpositions are summed and then applied to both channels as well as to all pitches of the solo mode (menu 4). Changes are taken to effect at the beginning of the next bar after the transposition buttons were released.

The length of the output patterns can be set individually for each channel by holding buttons B2.7/B2.8 and turning pot P2.2. Also here, changes are applied at the beginning of the next bar after the buttons were released.



Probab./  
Loop /  
Envelope



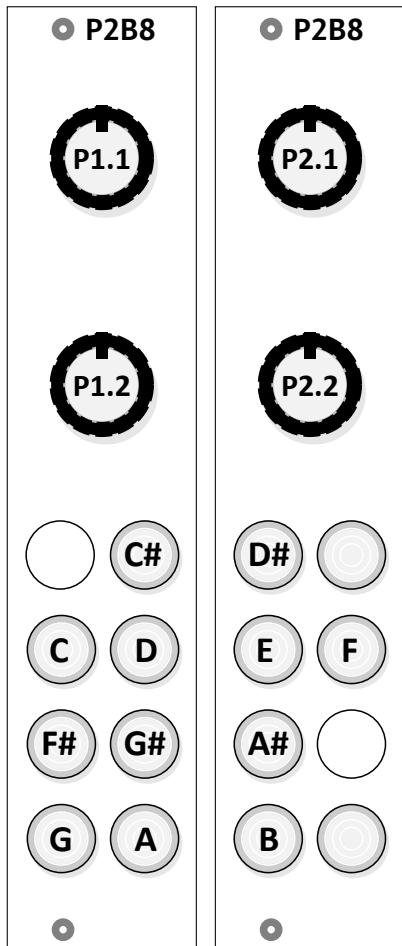
## Menu 2: Probabilities / Pattern looping/ Envelope (B1.2)

In this menu you can set the probabilities that are used by a stochastic algorithm to select note pitches, octaves and durations. In principle, the 2 available channels are represented each by 2 algoquencers which run patterns of random triggers. In the pitch algoquencer, every step is associated with a pitch and octave. In the rhythm algoquencer, every step is associated with a note duration, depending on what the stochastic algorithm has selected based on the probability settings.

As both channels/algoquencers utilize the same algorithmic selection/output, both channels play exactly the same melody if their activity parameters are set to maximum (see below), forcing the algoquencers to trigger every step. At lower activities, the melodies start to deviate as the algoquencers trigger different steps. Moreover, by deactivating buttons B2.5-B2.8, the algoquencers can be set from free mode to loop mode, where they repeat their latest 16 step patterns with fixed pitches and octaves (B2.5/B2.7) or fixed note durations (B2.6/B2.8), or both. If activated again, at the beginning of the next bar, the algoquencers return to free mode, being continuously fed with new values from the stochastic algorithm and random triggers. In this way you can shape the 2 channels individually. Set probabilities as you like and bring channel 1 to loop mode. Then change probabilities and modify channel 2.

The activity of the 2 channel algoquencers can be adjusted by the pots P3.3/P3.5 of the P10 controller (see title page). Pots P3.4/P3.6 are split pots, where the left half (pre 12 o'clock) sets the dejavu parameter and the right half (post 12 o'clock) the morph parameter.

## Pitch probabilities



### Submenu 2a: Pitch probabilities

(B1.2 + B2.1)

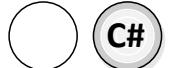
By pressing button B2.1 the submenu to set pitch probabilities is called, showing a mini piano roll of dimmed leds. Select or deselect specific notes, and use pot P2.2 to assign a probability. You can select either a single note or multiple notes at once (pulsing leds), depending on the state of button B2.8. The probabilities are also reflected by the brightness of the note button leds. At least one pitch probability has to be raised above 0 to allow the channels play a note (and channel activity has to be non-zero as well). Use button B2.4 to return to the main menu page.

In the main menu, notes that are currently selected in the submenu remain adjustable by pot P2.2 as long as button B2.1 of the main menu is lit (which means that the pitch submenu has been called last).

## Octave probabilities and biases

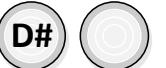
Probability  
octave -1

P2B8



C

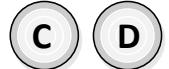
C#



D#

Set octave  
bias

B2.2



D

E

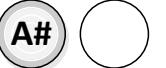


F



F#

G#

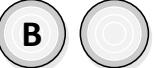


G#



G

A



A

single/multiple  
note selection

B2.2

B2.3

Probability  
octave +/-0

P2B8



Probability  
octave +1

P10



### Submenu 2b: Octave probabilities and biases

(B1.2 + B2.3)

Here the probabilities for 3 octaves can be set. The upper pots P1.1, P2.1 and P3.1 determine the general probabilities for all notes. If all pots are at zero, no octave variation is applied. If only one pot is set non-zero, this octave will always be played.

On top of the general probability distribution, for every note an octave bias can be defined, which assigns a probability of at least 0.75 to a preferred octave and leaves at most 0.25 for the other octaves. To do this, select one or multiple notes (pulsing leds) and set an octave with pot P2.2. You can choose 4 values shown by the leds of the Droid master unit as well as by the brightness of the button leds. 1 means no bias is applied, 2 means one octave down is preferred, 3 means center octave is preferred, and 4 means one octave up is preferred.

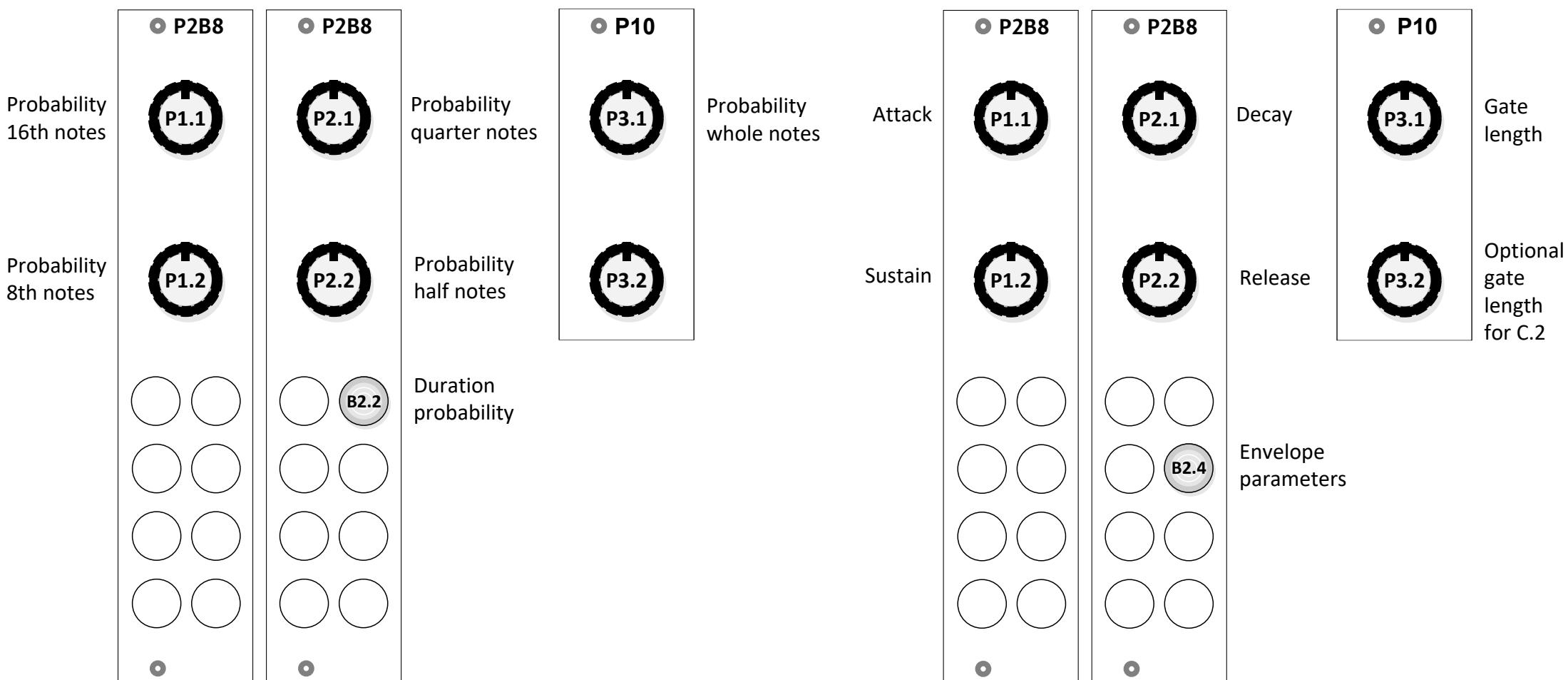
Press button B2.2 to return to the main menu page. Similarly, the biases currently selected in this submenu remain adjustable by pot P2.2 as long as button B2.3 of the main menu is lit.

## Submenu 2c: Duration probabilities

(B1.2 + B2.2)

Probabilities of note durations are set here by the large pots.  
If all probabilities are set to zero, 16th notes will be played.

### Duration probabilities



## Submenu 2d: Envelope parameters

(B1.2 + B2.4)

Here you can adjust the ADSR envelope parameters of the gate outputs (which are in fact envelope outputs). The gate length set by pot P3.1 determines the length of the last 16th in all note durations played by the algoquencers, as a fraction of the clock duty cycle. It controls whether notes are played more staccato or legato, in particular 16th notes. As this parameter has quite some expressive potential, there is cv control (offset) provided via input I3.

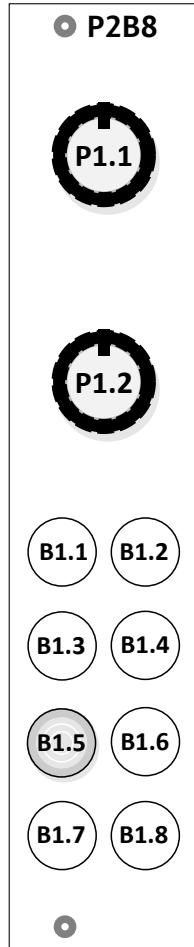
<b>Fillorder/ Branches</b>	<b>P2B8</b>	<b>P1.1</b>	Fills depth	<b>P2B8</b>	<b>P2.1</b>	
	<b>P1.2</b>			<b>P2.2</b>		Offbeats
	<b>B1.1</b>	<b>B1.2</b>	Fillorder 0	<b>B2.1</b>	<b>B2.2</b>	Branches 0
	<b>B1.3</b>	<b>B1.4</b>	Fillorder 1	<b>B2.3</b>	<b>B2.4</b>	Branches 1
	<b>B1.5</b>	<b>B1.6</b>	Fillorder 2	<b>B2.5</b>	<b>B2.6</b>	Branches 2
	<b>B1.7</b>	<b>B1.8</b>	Fillorder 3	<b>B2.7</b>	<b>B2.8</b>	Branches 3

### Menu 3: Fillorder, branches (B1.3)

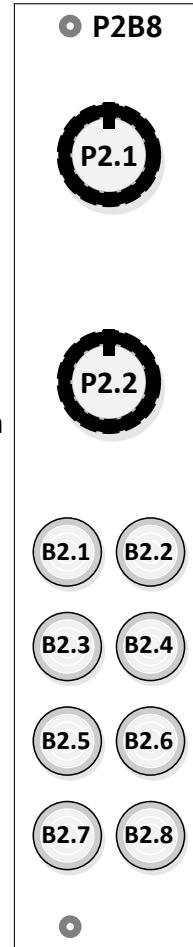
Here you can set the fillorder and branches parameter 0-3 for the algoquencers. These parameters affect rhythmic variations of the algoquencers. For more details, see the description of the algoquencer circuit in the Droid manual.

The depth of the fills parameter is controlled by pot P2.1, the offbeats and distribution parameters by pots P3.1/P3.2. These determine whether variations in the algoquencer patterns are happening more on off beats or down beats, and more in the first half or second half of the pattern (see Droid manual).

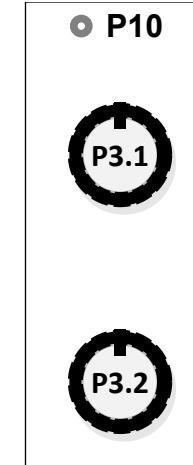
Pitch center



Pitch spread



Pitch prob.  
activated in  
submenu 2a



Pitch  
assign

Assign 1

Assign 3

Assign 5

Note selected by  
pitch probabilities,  
center and spread

Assign 2

Assign 4

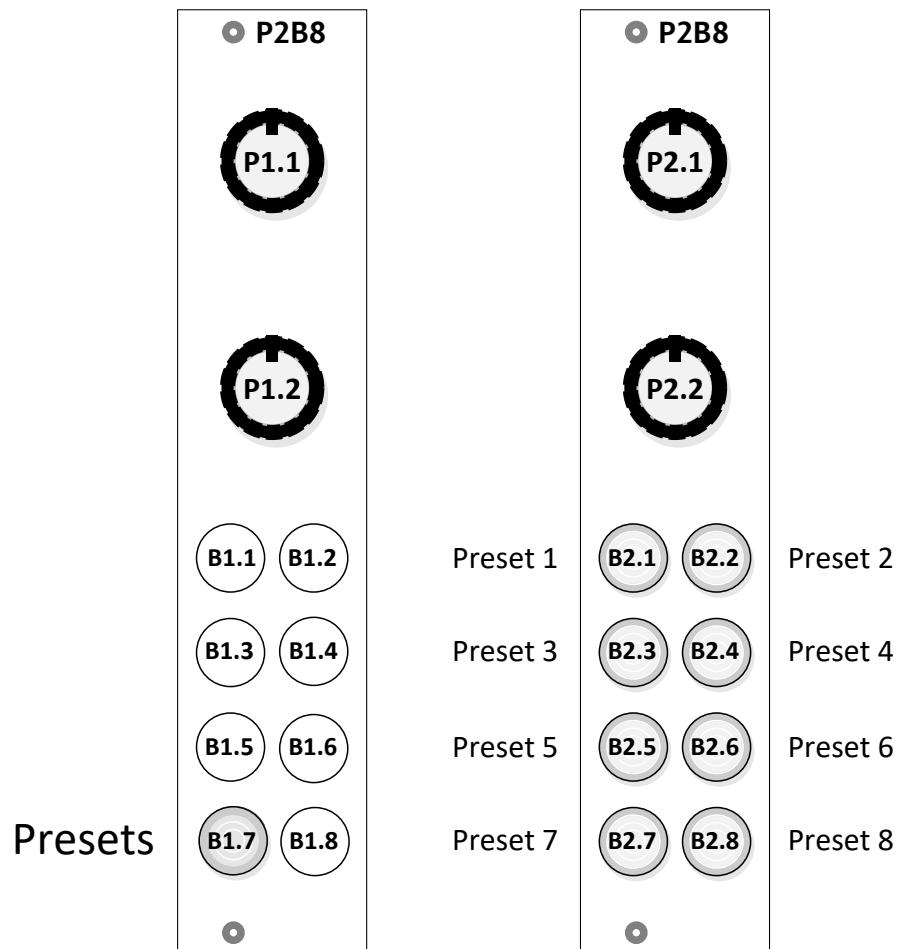
Assign 6

#### Menu 4: Solo channel (B1.5)

This menu allows you to manually trigger notes that are either selected by the stochastic algorithm or predefined to dedicated assign buttons.

To trigger the stochastic algorithm, press button B2.8. The note selection works as follows: Pot P1.1 slides over 3 octaves and determines a center pitch. Pot P2.1 determines a spread around the center pitch as the number of semitones below and above the center, that are allowed to be selected. The notes inside this window are evaluated by the pitch probabilities set in menu 2. However, these probabilities are modified according to their distance to the center pitch. The farther away from the center pitch, the more their original probabilities are scaled down. This means that the notes that are finally selected gather around the center pitch but are still influenced by the original probability distribution. The spread determines how close the notes gather. Furthermore, pot P2.2 is linked to the pitch probability submenu (2a). The notes that are currently activated there to set probabilities (indicated by pulsing leds) can also be modified here in the solo mode. In this way you can include or exclude notes to the stochastic algorithm on the fly, giving better control over the notes to be triggered.

Sometimes, however, perfect control over the notes to be played can be crucial, for example at the start or end of a solo part. To ensure this, you also have 7 buttons available to which you can assign arbitrary pitches. Luckily, 7 notes are usually the number of notes of an entire scale. Hold one of the assign buttons and turn pot P3.1 to set its pitch in semitones. Yet, the center pitch always determines the octave of the assigned notes according to their shortest distance.



## Menu 5: Presets (B1.7)

Here you can save and load your settings and melodies to 8 presets. A long press on the preset buttons will save the current settings, and a short press will load them at the beginning of the next bar. A dimmed led is lit during queueing time.

Settings being saved include: Algoquencer random seeds, transposition, pattern lengths, mute states, loop states, envelope parameters, fillorder and branches, fills depth, offbeat, distribution, pattern activity, morph and dejavu.

Note: Unfortunately, probabilities are currently not saved to presets (though they survive a power cycle). The patch scratches hard at the capacity limit of Droid and saving the probability settings would add more than 30 pot states to the preset procedure, which would only work if you drop other features.