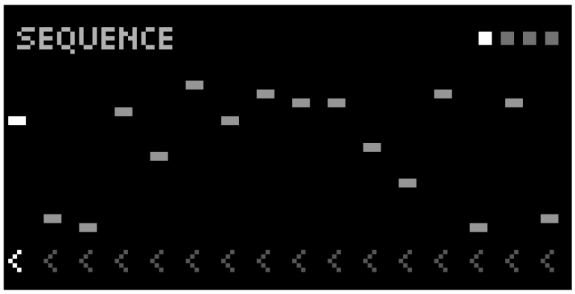
NORNS UI:

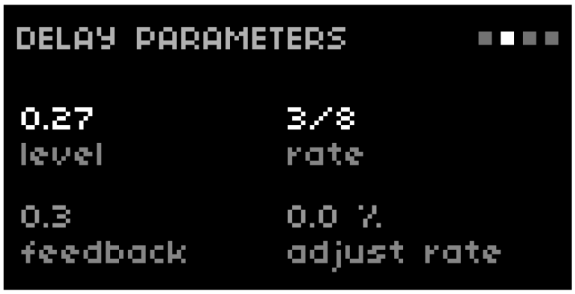
The user interface has 4 pages: **SEQUENCE**, **DELAY**, **SYNTH** and **COMMAND REFERENCE**. Use **ENC1** to scroll through the pages. Scroll through the command references (see page 4) with **ENC2**.

SEQUENCE PAGE:



- Navigate to the desired step with **ENC2.** The currently selected step is highlighted. Scroll through the commands with **ENC3**. While **KEY1** is held all commands except **#** and **?** are ignored.
- Hold **KEY1** and use **ENC2** to change the note of the selected step.
- Press **KEY2** to start/stop the sequencer. Hold **KEY1** and press **KEY2** to reset to the first step.
- Press **KEY3** to randomize the command sequence. Hold **KEY1** and press **KEY3** to reset the command sequence.
- Hold **KEY3** for longer than 1s to randomize the note pattern and reset the command sequence.

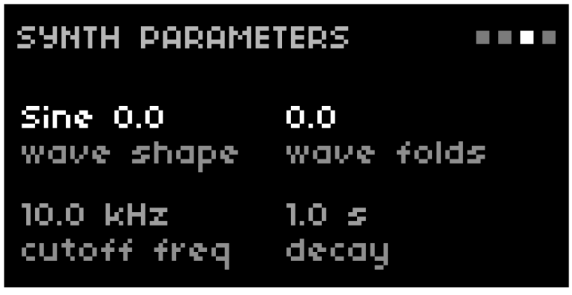
DELAY PAGE:



- **level: (0 – 1)** delay level
- **rate: (division)** delay rate (synced to internal clock)
- **feedback: (0 – 1)** feedback amount
- **adjust rate: (± 10%)** shorten or lengthen delay time to deviate from the synced rate.

Use **K2** to toggle between the top and bottom row of parameters (active row is highlighted) and use **ENC2** and **ENC3** to change the corresponding parameter values.

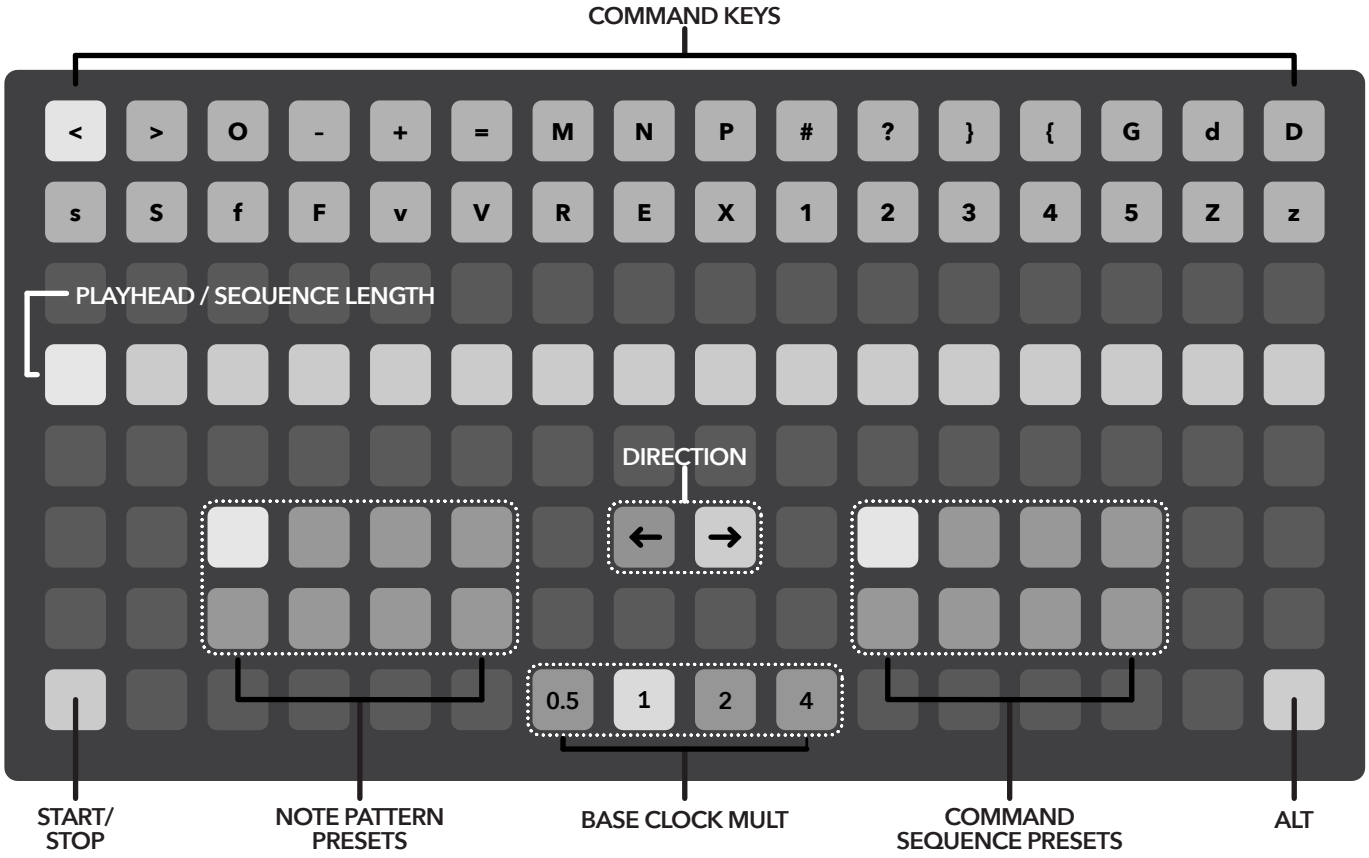
SYNTH PAGE:



- **wave shape: (0 – 10)** adjust waveform
- **wave folds: (0 – 10)** intensity of wave folding
- **cutoff freq: (0 – 10kHz)** cutoff of the lpg
- **decay: (0.01 – 8s)** decay of the lpg

Use **K2** to toggle between the top and bottom row of parameters (active row is highlighted) and use **ENC2** and **ENC3** to change the corresponding parameter values.

GRID LAYOUT:



KEY PRESSES:

- Press **START/STOP** to start or stop the sequencer.
- Hold a **COMMAND KEY** and press the desired step within the sequence row to assign the command to the selected step.
- Hold **ALT** and a step to make the playhead jump to the pressed step.
- **DIRECTION** selects the playback direction.
- **BASE CLOCK MULT** sets the multiplication of the internal clock source. At factor 1 a step corresponds to a quarter note.
- Select a note pattern by pressing the according **NOTE PATTERN PRESET** slot. To copy the selected note pattern to another slot hold **ALT** and press desired slot. The note pattern of that slot will be overwritten with the pattern data of the currently active (highlighted) note pattern slot. All changes are automatically stored.
- **COMMAND PATTERN PRESETS** are selected/copied the same way as note pattern presets.
- Select the sequence **LENGTH** by pressing and holding the according start-point and end-point keys. The length is set on key-release.

PARAMETER MENU:

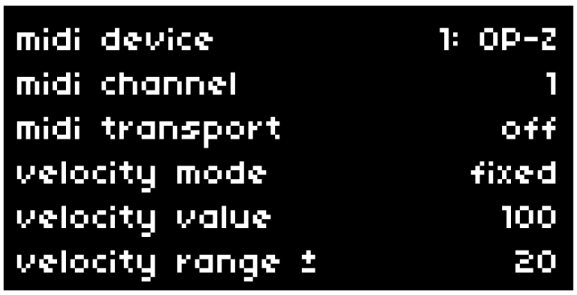
DUNES PARAMETERS:

- **output settings** > turn the passersby engine on/off. Select an external output (off, midi, crow 1+2, crow ii JF)
- **midi settings** > see midi parameters
- **scale settings** > select scale, root note and note display (on/off)
- **save & load** > save or load a note pattern and/or command sequence. The data is read from / written to the currently selected preset slot.

Saving/recalling sessions:

All parameter settings, note pattern presets and command sequence presets are saved/recalled via the built-in norns pset manager. Note that currently there is no callback function to automatically remove data from deleted pset. This has to be done manually.

MIDI PARAMETERS:

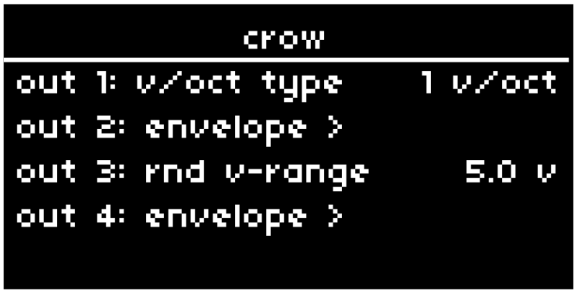


- **midi device: (1 – 16)** select midi device slot.
- **midi channel: (1 – 16)** select midi channel on which note data is sent.
- **midi transport: (off, send, receive)** send or receive midi start/ stop messages.
- **velocity mode: (fixed, random)** fixed velocity value is set via "velocity value", when set to random the velocity value is randomized within the range: "velocity value" ± velocity range.
- **velocity value (1 – 127)** set base velocity value.
- **velocity range: (± 1 – 127)** set velocity range.

SOUND PARAMETERS:

- **delay: (softcut delay parameters)**
- **synth: (passersby engine parameters)**

CROW PARAMETERS:



- **out 1: (1 / 1.2 v/oct)** set v/oct standard
- **out 2: (AD env)** set amplitude, attack and decay
- **out 3: (1 – 5v)** set random voltage range
- **out 4: (AD env)** set amplitude, attack and decay

COMMAND REFERENCE:

There are 33 commands in total, which affect the **SEQUENCE**, the **SYNTH** engine, the softcut **DELAY** and **CROW** outputs 3 and 4.

COMMAND DESCRIPTION:

< Octave down (clamped at -1 octave)
> Octave up (clamped at +1 octave)
O Random octave (either +1, 0 or -1 octave)
- Half tempo (clamped at base rate / 4)
+ Double tempo (clamped at base rate * 4)
= Reset tempo to base clock rate
M Add rest (at step)
N New note (at step)
P New pattern (randomized note pattern)
Reset position to first step if direction fwd or to last step if direction rev
? Jump to random step
} Forward direction
{ Reverse direction

G Random glide at step
d Decrements the currently set decay value
D Increments the currently set decay value
s Decrements the currently set wave shape value
S Increments the currently set wave shape value
f Decrements the currently set wave fold value
F Increments the currently set wave fold value
v Decrements the passersby reverb mix (clamped at 0.05)
V Increments the passersby reverb mix (clamped at 0.5)

R Set random voltage: crow output 3 (set range in params)
E Trigger AD envelope: crow output 4 (set slopes in params)

X Randomly set the pan position (-1 - 1) of the softcut delay
1 Reset the delay rate to the set value (softcut playback speed = 1)
2 Multiply the delay rate by 2 (clamped at 2), play forward
3 Multiply delay rate by 2 (clamped at, 2), play reverse
4 Divide delay rate by 2 (clamped at 0.5), play forward
5 Divide delay rate by 2 (clamped at 0.5), play reverse
Z Freeze the delay buffer (loops recorded material)
z Unfreeze delay buffer

! Insert a random command at a random step (not selectable via grid)