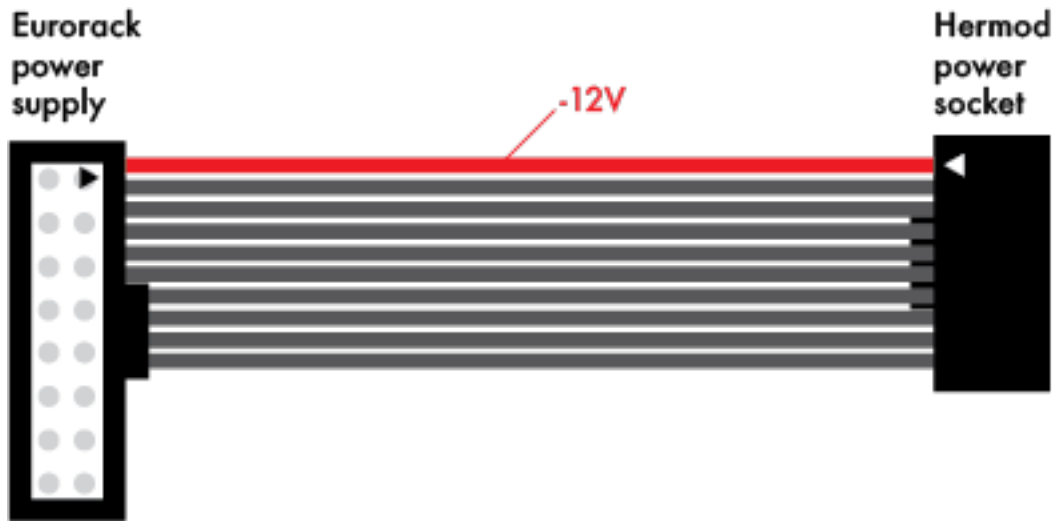# HERMOD QUICKSTART

Wire up

First, be sure that the supplied micro SD card (1GB) is inserted in the back of Hermod (Hermod can't work without its SD memory). Connect Hermod to your eurorack system power with the supplied ribbon cable:

Use the 4 supplied screws to fasten Hermod to your system: your sequencer is ready to use!

Note: Hermod requires a ±12V eurorack supply, and consume 310mA from the +12V rail and 30mA from the -12V rail. If Hermod powers an USB midi device from its USB HOST port, add up to 500mA from the +12V rail.

Sequencer workflow

Each of Hermod's 8 CV/Gate output is controlled by a track. A track can be configured to control more than 1 output for polyphonic, velocity, and aftertouch use. A track can also be used as a "modulation" track, to allow CV and CC recording/ playback, gate, and clock messages.

Each of these tracks contains:

• an effect rack with up to 8 effects,

• a "mod matrix", allowing you to control effect parameters using CV or CC,

● a "pattern", which allows you to create, record and modify a sequence of notes, gates or modulation messages.

These 8 tracks are grouped into one of Hermod's 8 sequences. Every sequence is totally independent and contains a new set of tracks to be played with, for a total of 64 tracks in a single project:

8 SEQUENCES

■ empty track
■ created track

SE01 | **SE02** | **SE03** | **SE08**

Track parameters:

zoom resolution	track length	number of voices	layout configuration
(x1 to x8)	(1/4 to 16 bars)	(1 to 8)	(mono, poly, velocity, ...)

Track events:

Notes (mono or poly)	
Modulations (or velocities, aftertouch, LFO)	
Gate/clock	

Track effects:

| Up to 8 effects | 1 2 3 4 5 6 7 8 |

You can save/load an unlimited number of projects in a flash (without stopping Hermod), allowing you to play for hours with your patterns, tracks and sequences.

Modes quick tour

Hermod user interface is laid out into 4 main modes:

- **EFFECTS** mode : Add/configure effect, Mute/unmute effects, set up effect modulation using the ModMatrix.

- **STEP** mode: Edit pattern, add/edit notes, gate and modulation, with step-by-step edit.

- **TRACK** mode: Mute/unmute tracks, set up layout, configure midi, CV and routing.

- **SEQ** mode: set the current sequence on the fly, change playback style between sequence, program a chain of sequence, and access the project manager.

Project Hierarchy

A Hermod project includes 8 sequences. A sequence is a snapshot of Hermod's state, it stores every track parameters and recorded patterns. You can use each sequence for individual part of a song or live project.
The behavior of Hermod depends on how you assign each voice to the tracks. By default, a track outputs monophonic notes to its corresponding output (E.G. track 1 to CV/Gate 1, …). You can configure a track behavior by changing its layout.

A track can be used in a variety of modes:
- Monophonic
- Monophonic + velocity

- Monophonic + velocity + aftertouch
- Polyphonic
- Polyphonic + velocity
- Unisson
- Modulation

This way, you can adjust Hermod's settings to fit any use case in your modular system.
All the fun in Hermod resides in it's effect system : each track contains up to 8 effects, allowing you to transform input signals, whether it is MIDI or CV. (CV signals are transformed and treated as MIDI messages internally).

Finally, a track contains a pattern of up to 64 steps. There are 2 different types of pattern:
- A **note pattern**, as you would expect, is a sequence of notes.
- A **modulation pattern** can be used to record and play CV or CC automation patterns, as well as recording gate sequences for drum or clock signals.

Voices colors (RGB leds)

Colors help you to know the voice layout of Hermod selected sequence, and the **CV** voltage outputed:

notes
velocities
aftertouches
modulations

low   high

Example of a voice layout:

voice1	1	= CV note pitch — track 1
voice2	2	= CV note pitch — track 2
voice3	3	= CV note velocity
voice4	4	= CV note pitch — track 4
voice5	5	= CV note velocity
voice6	6	= CV note aftertouch
voice7	7	= CV modulation — track 7
voice8	8	= CV modulation — track 8

cv   gate
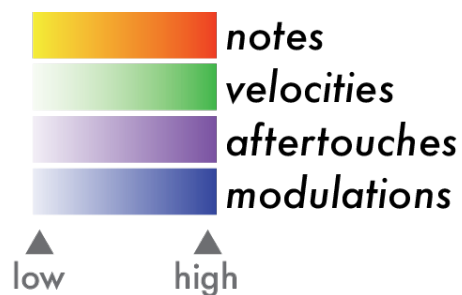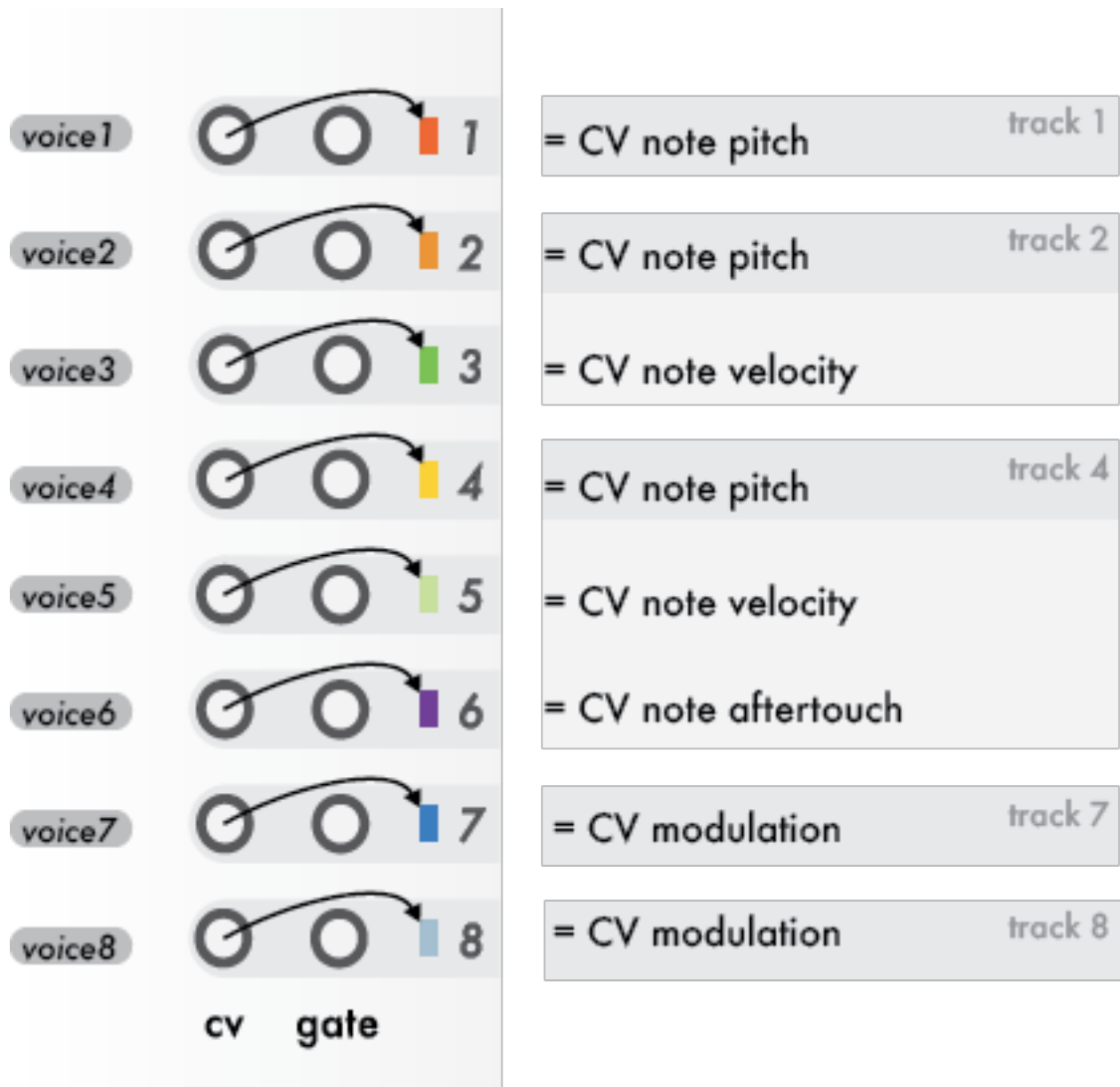
If the **GATE** is active, the led will flash with high luminosity:

voice1	○	⊙→☀1	= GATE on
voice2	○	○ ▮2	= GATE off
voice3	○	⊙→☀3	= GATE on
voice4	○	⊙→☀4	= GATE on
voice5	○	⊙→☀5	= GATE on
voice6	○	○ ▮6	= GATE off
voice7	○	○ ▮7	= GATE off
voice8	○	⊙→☀8	= GATE on
	cv	gate	
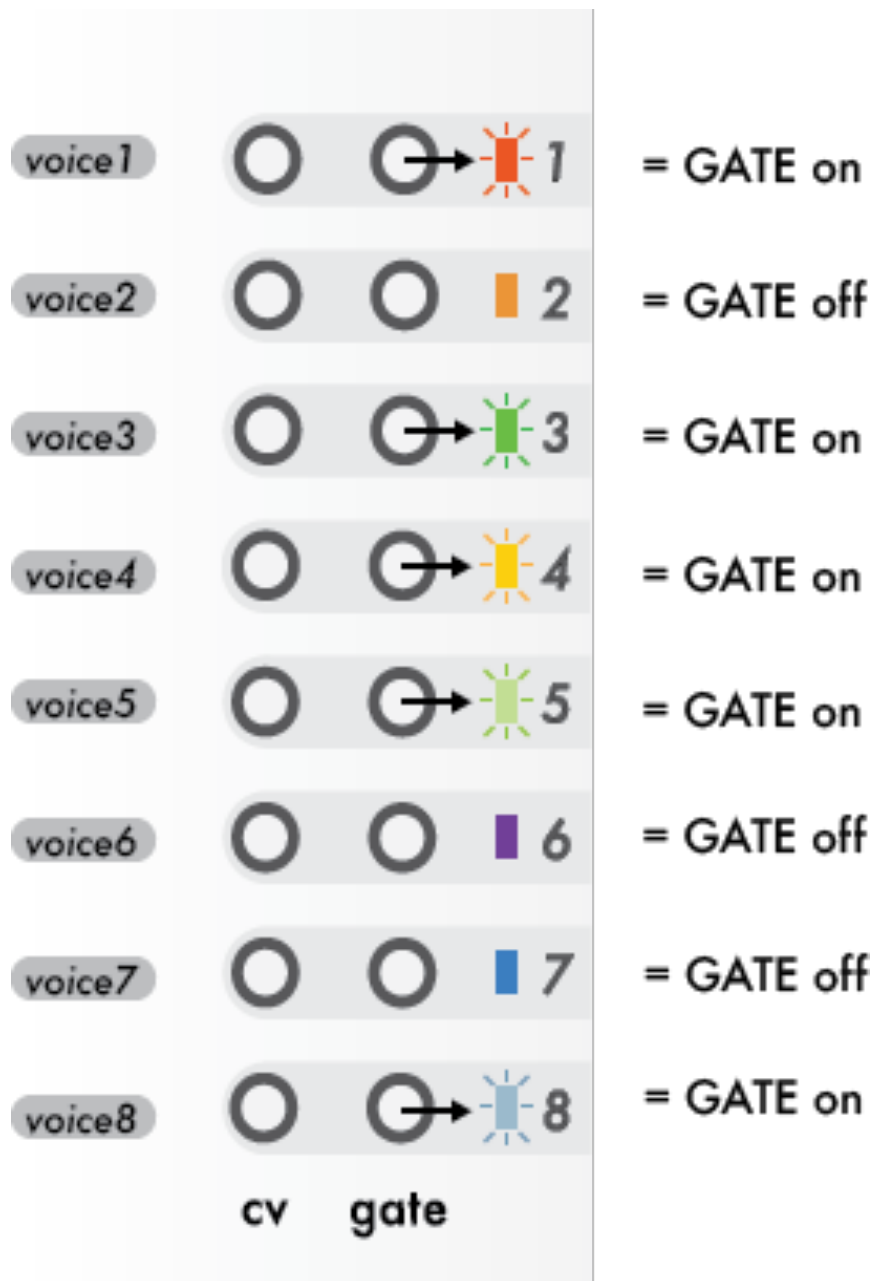
By default, each voices are assigned to output **CV** note pitch + their associated **GATE** (each track layout is set to 1 voice, mono).
Please refer to the <mark>TRACK</mark> *section to change eack track layout (assign voices to output mono or poly notes, velocities, aftertouches, modulations and/or gates).*

BASICS

Set up a track

In **TRACK** mode, select a track, either by scrolling or by pressing (**TRACK** + pad ▪▪▪▪).

Press Y to enter settings, select either "midi channel" or "CV source" to set up your inputs. The "active track" setting will allow you to route a channel to the currently selected track, very handy when recording sequences.

Go back to Track mode, and press X , choose the number of voices and the layout you wish to use. For exemple, if you want 2 voices of polyphony with their associated velocity, select "4 voices", and "Poly + Velo" when prompted. The four voices will now flash, and the display will show each voice's role.

1 NOTE	2 NOTE	3 NOTE	4 NOTE
5 NOTE	6 NOTE	7 NOTE	8 NOTE

Start/stop

To start the sequencer, press play ▶. Pressing play again will stop the sequencer and return to the beginning of the sequence.

Create/record/edit a note pattern

You can record a pattern in any mode by pressing rec ⬤.
If the sequencer is not running, it will start it.

You be able to record events from the MIDI port, the USB host or the USB device port. Hermod always records polyphonic notes and velocities, pitchbend and aftertouch messages, so you can record expressive performances.

If configured in the settings > CV in settings, you can even record notes from the CV inputs (CV/GATE AB, CV/GATE CD).
In **STEP** mode, there is a small piano roll that will display where you recorded notes and their length. You can zoom in and out by pressing X and scrolling, and change the pattern length (in step), by pressing Y and scrolling.

If you want to delete a recorded note, press the pad ▦ where the note stands. A lit pad means that a note sits here. If you want to edit a note, press and hold the pad, you'll see one of the 3 parameters (pitch, velocity, and length) being highlighted in the display. While holding the pad, you can scroll through the current parameter and jump to the next one by pressing the main knob. You can, of course, add a note with the parameters you want by pressing an empty pad.

Create/record/edit a modulation pattern

If you want to create a modulation automation, you need to configure a track as a **MOD** 〜 pattern:

- enter **TRACK** mode
- select an empty track, that will be the modulation track
- press X to launch the layout configurator
- select **1 VOICE** and **MODULATION**
- enter **STEP** mode to see the modulation pattern

Then, you can add modulation steps by holding a pad ▪▪▪▪ and selecting the value (from 0 to 127) with the encoder.
By pressing rec ⊙, you can also record a modulation with a midi controller connected to the MIDI port, the USB host or the USB device port, using its modwheel (midi message CC1).

If configured in the settings > CV in settings, you can even record a modulation from the CV inputs (MOD A, MOD B, MOD C, MOD D).

To delete a recorded modulation, press the pad ▪▪▪▪ where the MOD stands. To edit a recorded modulation, hold the the pad ▪▪▪▪ and rotate the encoder.

TIP Like the note pitch, the modulation is outputted on the CV voice (for example, the **cv#5** if you selected track 5). That means that the **gate** is free. You can program an independent gate

pattern by holding **STEP** and selecting GATE ⌐, and then pressing a pad ▰▰▰▰ to add/remove a gate.

Mute/unmute a track

Enter **TRACK** mode, if a track pattern is not empty, its pad will be lit. Press the pad to mute/unmute the track.

Add/edit effect

Enter **EFFECTS** mode. Select an effect slot by scrolling and pressing the encoder, or by pressing **EFFECTS** + a pad ▰▰▰▰. Select the effect you wish to use, you are now in the edit section of this effect. Set up the effect as you wish. To go back to effect, select "back" or press **EFFECTS** again.
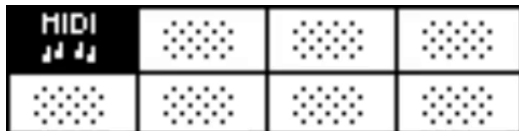
ModMatrix

Once you've added an effect, you can control one of its parameter with an external source (CV or CC message). In **EFFECTS** mode, press Y to enter the ModMatrix. Press a pad ▰▰▰▰ to select one of the four modulation routes. Select the modulation source by scrolling, press the encoder and select the modulation destination. Press again to confirm.

Switch sequences

Once you are happy with your first sequence, enter **SEQ** mode.
Press a pad ▰▰▰▰ to create/select a new sequence.
Now you have a new blank sequence to play with. By default, Hermod's sequencer is in sequential playback mode: if the sequence is playing, the actual sequence switch will happen at the end of the selected loop length.


```
MY PROJECT
LOOP: 8
PLAY: SEQ
```

Edit operation

In every 4 modes you can access the edit operations by pressing the encoder. You can copy, paste, and delete patterns, effects, tracks, and sequences.

Tempo

Hold rec ◉ and press play ▶ to enter the BPM menu, scroll the encoder to edit, and press it to go back.
To slave Hermod to a Midi or analog clock, go to **TRACK** mode, press Y to enter settings, and navigate to clock settings.

How to pair Hermod with Pyramid

You can increase the potential of Hermod by pairing it with the Pyramid sequencer, or you can to use Hermod as a CV/Gate interface for Pyramid midi outputs.

Syncing Hermod with Pyramid works exactly the same as syncing Hermod with any kind of hardware/software sequencers.

Connect Pyramid's MIDI or USB output to Hermod's MIDI or USB HOST input. Then you will be able to perform with the Pyramid interface, while its midi notes will be converted to CV/Gate standard thanks to Hermod. You can even use Hermod internal midi effects (e.g. add glides to notes), and use Hermod's sequences and projects as "layout scenes" for your setup.

Note that Hermod is a 100% standalone sequencer, and works beautifuly without any master.

Connectivity

CV INPUTS

Hermod includes four CV inputs, that can be configured according to your needs: control effect parameters, clock, sequence change, CV/Gate note pitch, modulations.

For example, the four CV inputs can be split into one pair of CV/Gate input, a CV modulation and an analog clock input.

Use the ModMatrix (in **EFFECTS** mode) or *SETTINGS > CV SOURCE* to configure the four CV inputs.

CV/GATE OUTPUTS

The eight CV/Gate outputs can also be configured to your more complex needs, in order to sequence CV notes (mono and poly), modulations, clocks, velocities, aftertouch, ...
This configuration is called "Voices layout", please refer to **TRACK** section to learn more about it.

MIDI INPUT

Control Hermod (with a controller or a sequencer) and receive midi notes, CC messages, pitch, aftertouch, play/stop and clock. Use *SETTINGS > MIDI CHANNEL* to set the channel controlling each track. The parameter *ACTIVE TRACK* allows you to control the active track and the **STEP** note learn.

MIDI OUTPUT

Control and sequence a mono/poly synthesizer, a drum machine, a sequencer, ... with this midi output.

In **EFFECTS** mode, add the effect MIDI OUT to route midi events to a selected midi output channel. You can also use *SETTINGS > MIDI THRU* to route all incoming events to a midi output.

USB DEVICE (bi-directionnal)

Connect Hermod to your computer with a standard USB cable and Hermod will receive midi notes, CC messages, pitch, aftertouch, play/stop and clock. It works like the MIDI INPUT: use *SETTINGS > MIDI CHANNEL* to set the channel controlling each track.

Hermod can also control and sequence virtual instruments (VST) on your computer, and sync your DAW via MIDI clock. It works like the MIDI OUTPUT.

USB HOST (bi-directionnal)

This second USB port allows you to connect and power any kind of USB device, for example:
- a midi USB controller (e.g. Keith McMillen K-Board)
- a midi USB sequencer (e.g. Squarp Pyramid)
- ...

It is possible to receive midi data in order to control and/or slave Hermod, or to send midi data to control and/or slave other devices.

Please note that Hermod is not compatible with high-speed USB devices, such as Elektron Digitakt, but it's always possible to use Hermod midi input/output to connect that kind of instrument.Moreover, Hermod is not compatible with USB hubs, so you can't connect more than one USB device on the USB host port.

Compatible USB instruments on the Hermod USB port (non-exhaustive list, to be updated soon):
- Arturia devices
- Novation devices
- Keith Macmillen devices
- Squarp Instruments devices
- Teenage Engineering devices
- Akai MPK
- Kawai VPC
- Miditech devices

Connectivity Examples

Eurorack master sequencer
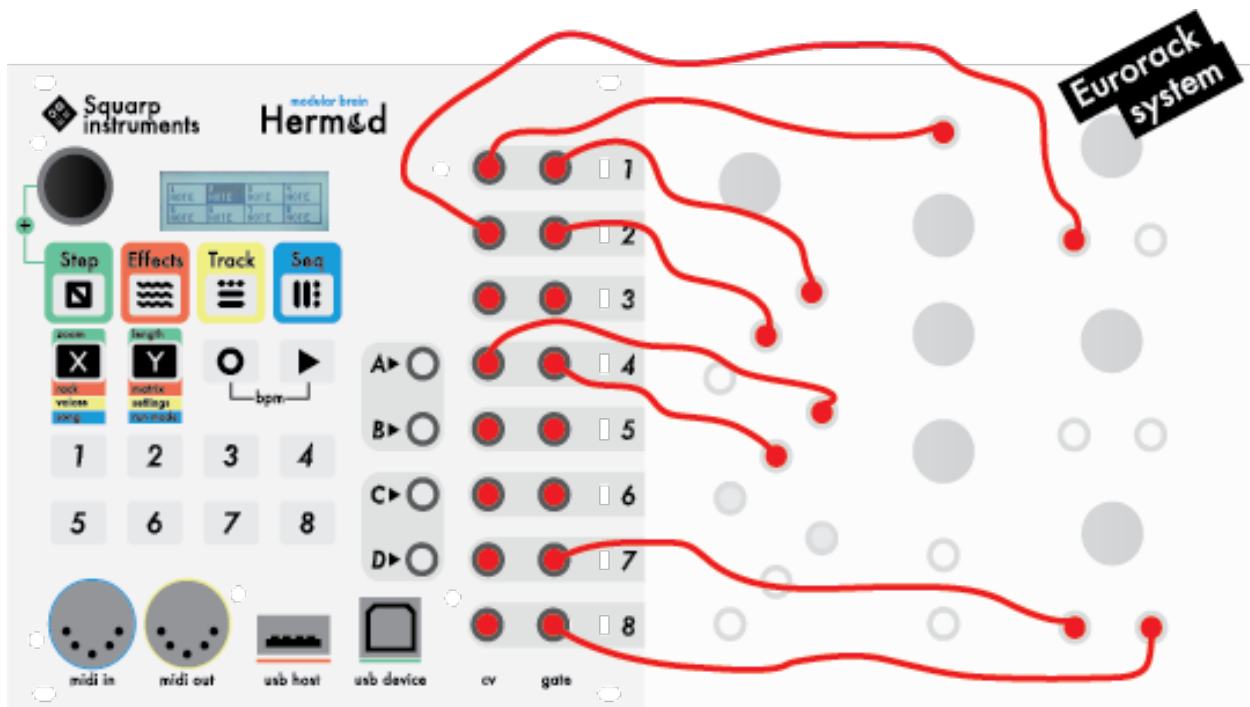
Hermod can fully sequence your eurorack system, from the smallest to the more complex setup.

Midi + USB host + USB device interface
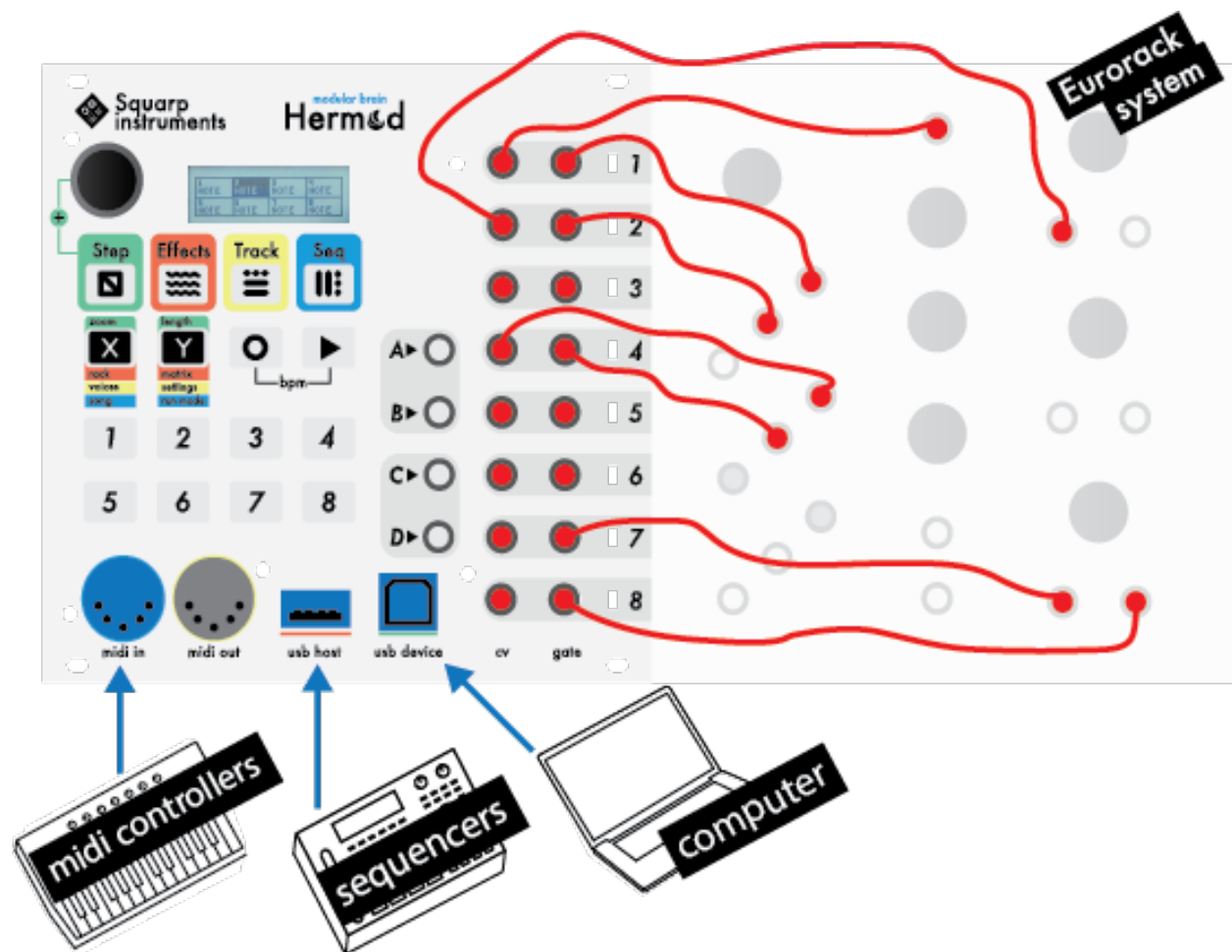
You can use Hermod as a simple CV interface, like a hub.
All worlds are connected: MIDI, USB and CV.
You don't need any software to configure Hermod: the user interface allows you to route MIDI + USB to CV in a flash.
When using USB (host/device) to CV, Hermod's powerful CPU (Cortex-M7 216MHz) allows you to convert midi notes to CV/Gate with an ultra-low latency.

Eurorack sequencer (with CV inputs) + midi sequencer + USB host
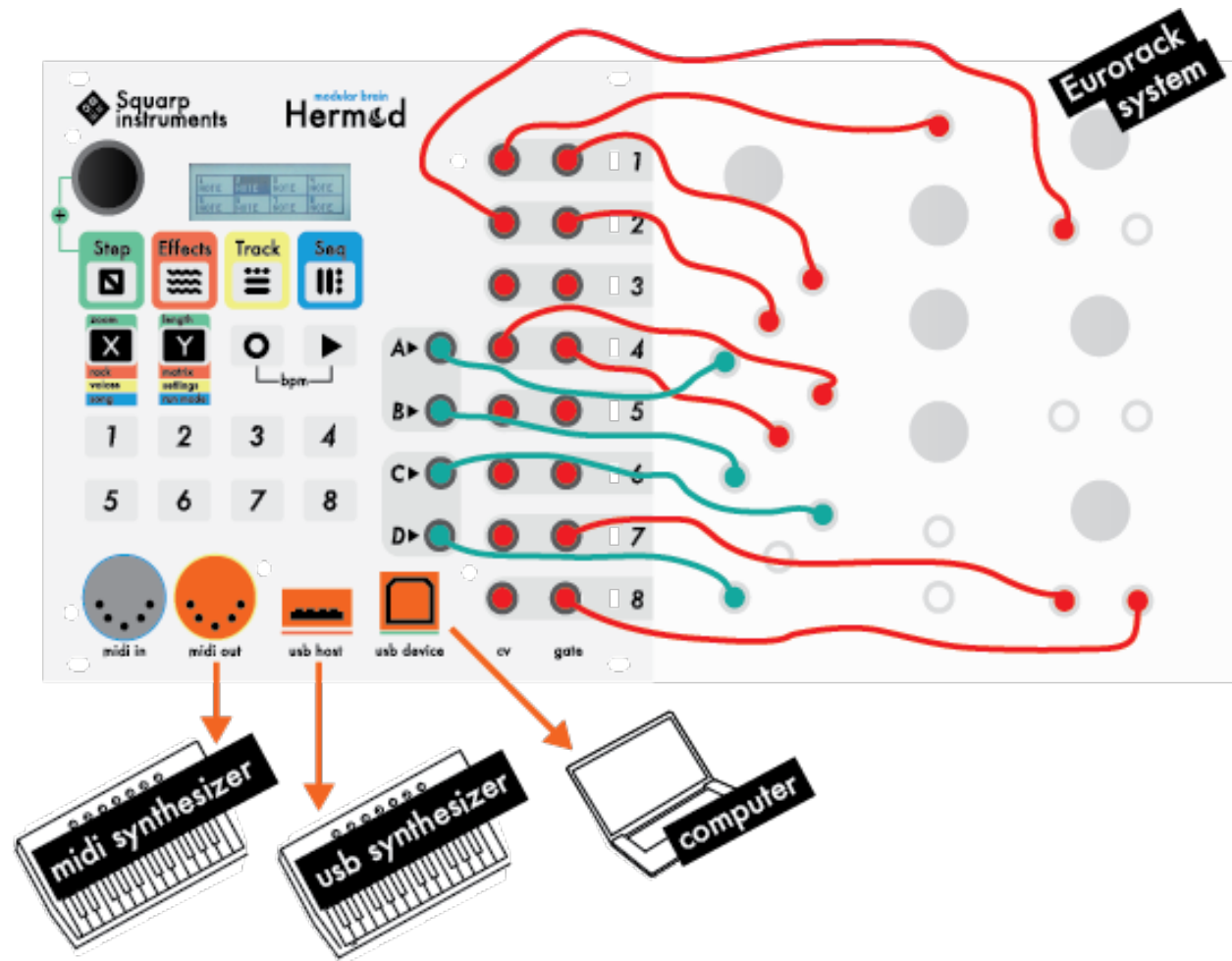
Your eurorack system can communicate with Hermod in many ways. The CV inputs are great to add complexity to your songs. Hermod can be also used as "midi sequencer", to control your synthesizers and your computer.

Multiple Hermods system
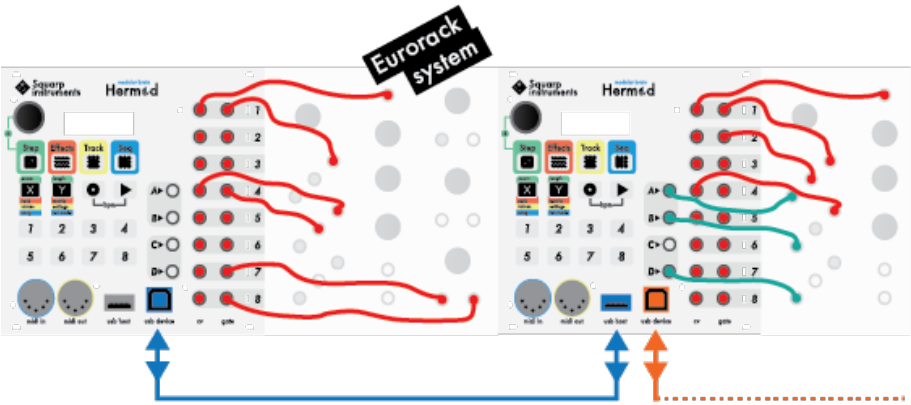
To extend the number of inputs/outputs, it's possible to "daisy chain" 2 Hermods or more, via USB.
Because the USB host and the USB device ports are bi-directionnal, you can easily set the master Hermod and the slaved Hermod.

You can even use multiple Hermods as MIDI/USB to CV interfaces for your computer or your tabletop sequencer:
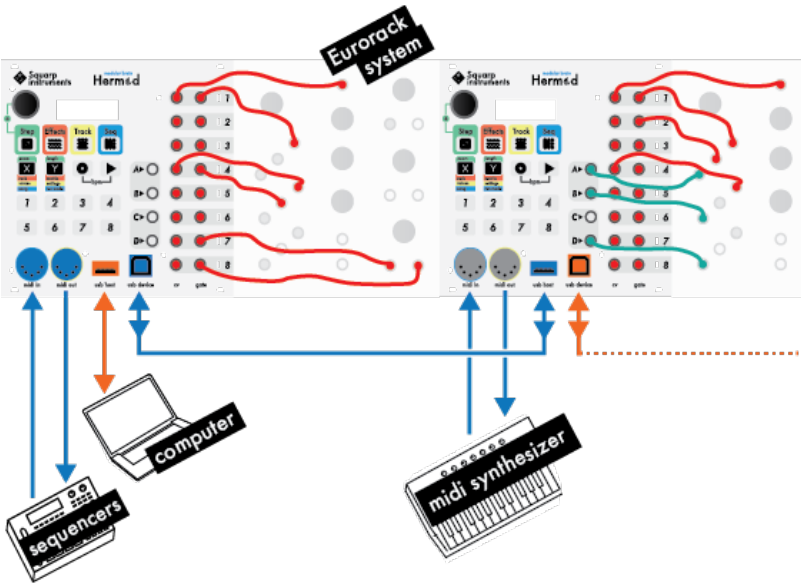
STEP MODE
The Step Mode

STEP mode allows you to edit patterns directly through Hermod's interface.
You can edit a live recording, add notes and add modulation/gate in modulation tracks.

Hermod pattern length can be extended up to 64 steps, and the powerful zoom (up to 8x) allows you to perform very precise step sequencing. It is even possible to select a 3x zoom to create triplets.

Hermod also features an "advanced edit mode". You can access it by pressing **STEP** + the encoder. In this mode, scrolling the encoder will move forward or backward the read needle in the pattern by one step, regardless of the zoom and player state, great to edit a pattern quickly!
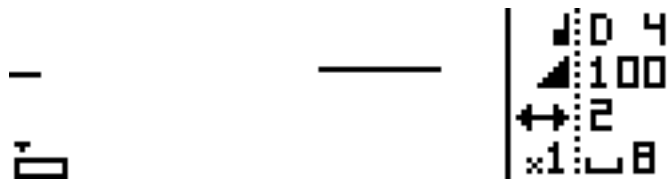
There are 2 recorded notes in this pattern.

Piano roll

In **STEP** mode, the display features a small "piano roll" which will show the messages recorded in the pattern.

The piano roll always displays the current page, depending on the zoom level. The piano roll has a different look depending on the type of track (notes or modulation) you are using:

- In "note tracks", each note is displayed as small lines. Lines are thicker when a chord is present on that point:

- In "modulation tracks", a line displays the recorded CV/CC sequence and small lines at the bottom display the gate signal:

Note that the piano roll is here for visual hint only and can't be used in order to interpret which note is currently playing due to the size of the screen.

Under the piano roll there is the track loop point, where you can immediately locate your position in the pattern and through the pages.

Pattern navigation
By default, a pattern is 8-step long and zoomed fully up (x1).
- Press and hold Y and scroll the encoder to change the track length. When increasing the length, new pages will be available to display. Simply use the encoder to scroll between pages.

• Press and hold ⊠ and scroll the encoder to change zoom value. In the same way, zooming in and out will increase the number of pages available to see. The display will always adapt to show the currently displayed page.

Edit a note pattern

In a note pattern, you will be able to add and edit mono and poly notes.

• Add a note

To add a note, simply press the associated pad ▰▰▰▰.

Each note has 3 parameters : pitch, velocity and length. To edit one of those parameters when adding a note, hold the pad, the current parameter will be highlighted (by default, the pitch), then scroll the encoder to change the pitch.

To edit an other parameter, press the encoder to highlight the desired parameters while still holding the pad, and scroll the encoder to adjust the selected parameter.
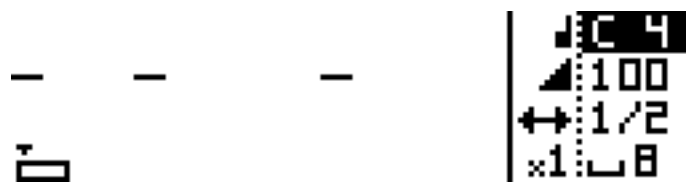
PITCH is selected.

VELOCITY is selected.

LENGTH is selected.

Just release the pad to add the note with the selected parameters.

• Edit a note
Edit a note works exactly in the same way, just press and hold the pad where the note lies, and edit its parameter. The note will be updated in real time. If several notes lies in the same step, you will edit all note parameters.

• Delete a note
To delete a note, just press and release its associated pad ▰▰▰▰.

• Note learn
Hermod's step mode improves greatly when using an external keyboard on the active track channel. The pitch and velocity parameters will be updated according to the last played note or chord.

Edit a modulation pattern
In a modulation pattern, you can edit 2 kinds of events: modulation value and gate. Hold **STEP** and rotate the encoder to select the parameter (**MOD** ᜊ or **GATE** ⌐) you want to edit.

To create a modulation pattern, please refer to **TRACK** section "Voices layout" to learn more about it.

● Edit a gate ⌐

To add a gate, just press one of the pads with gate highlighted, to change gate length, use the encoder to highlight the length parameter and scroll while holding the pad. Delete a gate by pressing the lit pad.

● Edit a modulation ∿

Modulation events will lit the pads. When ∿ is highlighted, press the pad at the position you want to add the event. Scroll the encoder to choose the event value. To delete an event, symple press the associated pad.

Rotate a pattern

In step mode, press and hold the encoder and scroll to rotate all the note or modulation message in a pattern. It will move the event depending on the zoom level.

For example zoom x1 = one step at a time, zoom x4 = one quarter note at a time, etc.

Advanced edit mode (+)

Advanced edit mode provides an alternative way to record notes into a pattern. Activate it by pressing **STEP** + clicking the encoder.

The four mode buttons will be lit, you wont be able to change mode without leaving advanced edit mode by pressing **STEP** + encoder again.

In advanced edit mode, scrolling the encoder will move forward the playback step position. If a note is recorded in this position, it will play it, moving forward to the end of the note will mute it. The encoder works like a vinyl player, you can move backward and forward in the pattern.

Edit notes and modulation directly on Hermod works the same way than on classic edit mode, but the mode buttons act as shortcuts for the parameters.

Edit pattern menu

By pressing the encoder in **STEP** mode, you can access the pattern edit menu. You can find the usual copy, paste, delete functions, as well as the randomizer parameters. You can also copy the current page, and delete only the pitchbend or the aftertouch.

The effects mode

You can add up to 8 real-time effects per track. Notes played live and recorded in a pattern are processed and sent to the outputs in real-time by the effect engines. All the effects are non-destructive, and polyphonic capable.
The position of an effect in the chain is very important: an Harmonizer placed after an Arpeggiator will not sound like an Arpeggiator placed after an Harmonizer. Experiment with the order of effects to generate eccentric melodies. It's also possible to add multiple effects of the same engine on the same track (e.g. chaining two arpeggiators).

Finally, every effect parameter can be edited in real-time via CC message and CV inputs, thanks to the modMatrix. Press `Y` in **EFFECTS** mode to access the modMatrix, press `X` to go back to effects mode.

Display

The display shows the 8 effect slots with their associated effects and highlights the currently selected effect.
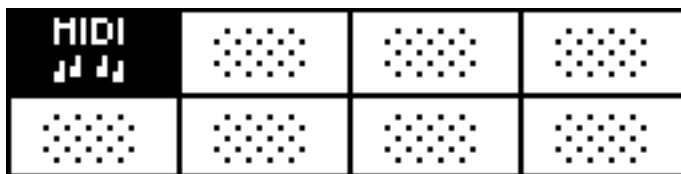
MIDI effect is selected.

Add an effect

First select an effect slot either by scrolling and pressing the encoder or pressing **EFFECTS** + a pad ▰▰▰▰.
You will be prompted to select an effect. Choose your effect, you'll now be in the edit section of that effect. Scroll to the

parameter you want to edit, press it to edit the parameter, and press again to go back to the edit list.
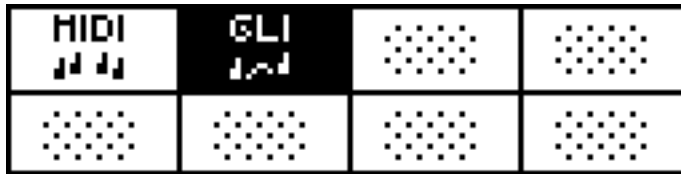
GLIDE/SMOOTH effect is added and selected.

Press the menu encoder to edit this effect.

To go back to the effect mode, either press the `EFFECTS` button or select "back".

Effect list

There are 13 different types of effects:
- MIDI (enable per default, can't be removed)
- Arpeggiator
- Chance
- Delay
- Euclid
- LFO
- Glide/smooth
- Harmonizer
- Output
- Random
- Ratchet
- Scale
- Swing

MIDI	ARP	HAR	DEL
CHA	SHI	SCA	LFO

8 effects are added.

Mute/Unmute effects

You can experiment with different effects in the same rack by muting/unmuting them the same way you do with tracks. Just press the associated pad ▰▰▰▰.

Edit effect menu

By selecting a filled effect slot and pressing the encoder, you can edit, replace, copy, paste and delete the effect. If you want to paste an effect in an empty slot, scroll down to the end of the effect list to find the paste option.

ModMatrix

With the modMatrix, you can control effect parameters using CC messages and CV inputs. You can also set up one of the modulation slot to control sequence change.

To enter the ModMatrix, make sure you are in **EFFECTS** mode and press Y .

```
CV   A —→OFF
OFF  —→OFF
OFF  —→OFF
OFF  —→OFF
```

Select the input (a midi CC or a CV input). This input will control the assigned parameter.

```
CV   A ──▶SEQ CHANGE
  OFF ──▶OFF
  OFF ──▶OFF
  OFF ──▶OFF
```

Select the parameter to be controled. Can be an effect parameter or the sequence change.

By default, the range of the CV inputs is *0V to +5V*, but you can use the *-5V to +5V* range (defined in the MIDI effect).
For example, if you use the *0V to +5V* range and the parameter *SEQ CHANGE*, an input between 0V and 0.625V will select the sequence **1**, an input between 0.625V and 1.25V will select the sequence **2**, ..., an input between 4.375V and 5V will select the sequence **8.**

TIP When ModMatrix is selected, the 4 RGB leds displays the 4 voltages (A, B, C, D), helping you to "see" the input signals.

THE EFFECTS LIST
Midi

To make the interface of Hermod clearer, we decided to gather every important settings of a track under an effect called MIDI:

```
HIDI
♩♩ ♩♩        ⋮⋮⋮⋮   ⋮⋮⋮⋮   ⋮⋮⋮⋮

⋮⋮⋮⋮   ⋮⋮⋮⋮   ⋮⋮⋮⋮   ⋮⋮⋮⋮
```
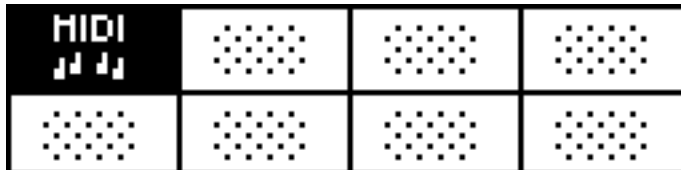
This effect is always on the first slot and can't be removed. Press the menu encoder to edit its parameters:

```
MIDI PARAMS:
  QUANTIZE       |OFF
  ROOT NOTE      |60
  FINETUNE       |0
```

QUANTIZE OFF 1/8 1/4 1/2 1/1
Enable the track timing quantization, and select the grid.

ROOT NOTE 0 ... 120
Select the root note of the track.

FINE TUNE 0 ... 60
Fine tune the CV outputs of the tracK.

BEND RANGE 1 ... 24
Select the range of the pitch bend.

AFTERTOUCH TO VELOCITY ON OFF
If ON, the track will send aftertouch messages on top of the velocity output.

MIN/MAX NOTE `1` `...` `120`

This parameter allows you to filter MIDI inputed notes of the track. This way, you can split a keyboard by setting up different ranges with the same input channel on different tracks.

MOD RANGE MIN/MAX `-5V` `...` `+5V`

This parameter allows you to constrain the output voltage range of a modulation track. For exemple if you want to send a signal between 0V and 5V rather than -5V to 5V without affecting the input range.

Arpeggiator

Turns notes and chords into running patterns.

STYLE `UP` `DOWN` `UP/DOWN` `ASSIGN` `RANDOM`

Direction of the arpeggiated pattern. **UP** plays the pattern from the lowest note to hightest. **RANDOM** will play notes in a random order. **ASSIGN** will play notes in the order they were played.

GATE `1%` `...` `200%`

Pattern note lengths, depends on the rate.

RATE `1/1` `...` `1/96`

Speed of the pattern. A rate of **1/4** will play a note of the arppegio every beat.

OCTAVE `-5` `...` `0` `...` `+5`

To create octaves progression. If **OCTAVE=1** the arpeggiator will play the original pattern, followed by the same pattern one octave higher. If **OCTAVE=-2** the arpeggiator will play the original

pattern, followed by the same pattern one octave lower, followed by the same pattern two octaves lower.

Chance

This effect plays or does not play a note based on probability. It's a great way to add variations to drums or melodies.

CHANCE 0% ... 100% VELOCITY

If "0%", the note will never be played. If "50%", the note has a fifty-fifty chance to be played. If "99%", the note will almost always be played. If "VELOCITY," the note will have the same probability of being played as its velocity. Very handy for programming different per note probability.

SYNC OFF BEAT 1/4 1/8 1/16

Add a synced probability ("sync chance" parameter). If sync = "1/4", all beat notes will have a different probability of being played. If sync = "1/16", all sixteenth notes will have a different chance to be played...

SYNC CHANCE 0% ... 100%

The probability of a synced note to be played. For example, if sync = "1/4" and sync chance = "100%", all beat notes will be played.

APPLY PER PPQN PER NOTE

If "PER PPQN" is selected, the probability affects a group of notes contained in the same PPQN (if a chord is played, all notes of the chord will be played or not). If "PER NOTE" selected, the probability affects each note (if a chord is played, only some notes of the chord will be played).

Delay

MIDI delay creates a copy of entered notes, simulating a standard delay effect, but using velocity MIDI data.

TIME `1/1` `...` `1/96`

Delay time is the amount of time between the original notes and the delay notes.

REPEAT `1` `...` `16`

Number of delay notes.

GAIN `0%` `...` `100%` `...` `200%`

Change the MIDI velocity of each delay note. The velocity of the delay notes will be gradually decreased (gain between 0% and 99%) or increased (gain between 101% and 200%). If the gain is set to 100%, the velocity will not change.

DRY/WET `0%` `...` `100%`

Change the midi velocity of all notes:
- if 0%, you will only hear the original notes,
- if 50%, you will hear both the original notes and the delay notes,
- if 100%, you will only hear the delay notes.

Euclid

The Euclidean midi effect generates uncommon and rich rhythmic patterns. Originally derived from nuclear physics, and then applied to music theory, an Euclidean algorithm evenly generates distributed notes (fills) among a defined number of available slots (steps). This leads to a great number of well-known rhythm patterns, as well as many odd-sounding ones. Almost all traditional rhythms from across the world can be generated with this tool.

STEP `1` `...` `32`

Set the total number of steps in your pattern.

FILLS `1` `...` `32`

Set the number of notes in your pattern.

RATE `1/96` `...` `1/1`

Set the rate of the euclidean pattern.

GATE LENGHT `0%` `...` `100%`

Set the gate of outputted notes.

ROTATE `0` `...` `31`

Shift the euclidean pattern, defined in number of steps.

GATE MOD `0%` `...` `100%`

Set the modulation of the gate lenght, to create a more lively euclid pattern. 0% do not modulate the gate length.

MOD SPEED `1` `...` `100` or `1/64` `...` `4/1`

Set the modulation speed, synced or not.

LFO

Generate high resolution waveforms in a flash, based on wavetables!

WAVEFORM SINE TRIANGLE RAMP SQUARE S AND H

Set the LFO waveform. S AND H means "sample & hold", generating a random value at each synchronized step.

SYNC OFF ON

Sync the LFO rate.

RATE 1 ... 100 or 1/16 ... 16/1

Set the rate of the waveform, synced or not.

PHASE 0% ... 100%

Set the phase of the waveform.

RANGE -100% ... 100%

Set the amplitude of the waveform. If 0, no LFO will be generated. If 100%, the LFO will be generated with the maximum range value. If -100%, the LFO will be generated with the maximum range value, but the waveform will be inverted.

DEST PITCHBEND MODULATION AFTERTOUCH

Set the destination of the LFO.

TIP It's possible to chain multiple LFOs (with the same CC number, on the same track), in order to create original waveforms.

Glide/smooth

Interpolates note pitch.

GLIDE TYPE LINEAR EXPONENTIAL SMOOTH

Set the glide algorhythm.

TIME `1` `...` `127`

Duration of the glide.

DEST `ALL VOICES` `VOICE 1` `VOICE 2` `VOICE 3` `...`

Only if the track is polyphonic (multiple voices). **ALL VOICES** will apply the glide on each voices. **VOICE 1** will apply the glide only on voice 1, **VOICE 2** will apply the glide only on voice 2, ...

Harmonizer

Turns notes into chords.

HARMO 1 `-24` `...` `0` `...` `+24`

Add an extra note according to the selected interval (harmonic). If HARMO1=12, a note will be generated one octave higher. If HARMO1=NO, no note will be added.

HARMO 2 `-24` `...` `0` `...` `+24`

Add a second extra note.

HARMO 3 `-24` `...` `0` `...` `+24`

Add a third extra note.

HARMO 4 `-24` `...` `0` `...` `+24`

Add a fourth extra note.

Output

Utility effect: send notes and CC messages to a selected midi output. Essential if you want to sequence a DAW or some midi instruments (for exemple a midi drum machine or a polyphonic midi synthesizer) with Hermod.

PORT `MIDI` `USB HOST` `USB DEVICE` `CV`

Send notes to a midi output.

CHANNEL `1` `...` `16`
Set the channel of this midi output.

DEST MOD `CC0` `...` `CC119`
Set the destination of the MOD automation, if the track is set as a modulation pattern (default = CC1 = mod wheel).

DEST PITCH `PITCH` `CC0` `...` `CC119`
Set the destination of the pitchbend, if the track is set as a note pattern (default = pitchbend).

DEST AFTERTOUCH `AFTERTOUCH` `CC0` `...` `CC119`
Set the destination of the aftertouch, if the track is set as a note pattern (default = aftertouch).

Random

Randomly changes notes parameters (velocity, pitch or octave).
DESTINATION `PITCH` `VELOCITY` `OCTAVE`
Note parameter to be randomized. **Pitch** will affect the note pitch, **Octave** will affect the note octave, **Velocity** will affect the note velocity.

- RANGE `0%` `...` `100%`
Negative amount of randomization. 0% (default) has no effect on notes. 100% set the maximum range of negative randomization.

+ RANGE `0%` `...` `100%`
Positive amount of randomization. 0% (default) has no effect on notes. 100% set the maximum range of positive randomization.

`TIP` This effect is very powerful to create generative patterns, mostly when using a scale effect behind it.

Ratchet

The Ratcheting midi effect (also called Gate effect) repeats incoming notes according to a selected clock.

RATE 1/96 ... 1/1

Set the rate of the ratcheting gate.

GATE LENGHT 0% ... 100%

Set the gate of outputted notes.

GATE MOD 0% ... 100%

Set the modulation of the gate lenght, to create a more lively ratcheting. 0% do not modulate the gate length.

MOD SPEED 1 ... 100 or 1/64 ... 4/1

Set the modulation speed, synced or not.

Scale

COLOR MAJOR MINOR DOMINANT SUSPENDED HALF-DIM DIMINISHED MESSIEAN INTERVALS

Select the color of the scale.

SCALE ... (dynamic)

Select the scale. This parameter is dynamic, and depends on the color parameter.

KEY C ... B

Select the scale root note.

STICK UP DOWN FILTER ALGO 1 ALGO 2

If a non-scaled note is exactly between two scaled notes, select if the effect have to choose the note below (DOWN) or above (UP). FILTER will not play notes outside the scale. ALGO1 or ALGO2 will randomly select the sticked note up/down.

TRANSPOSE `-12` `...` `+12`

Transpose all track notes, before the scaling.

Swing

Swing notes to create groove rhythms and easily go "off the grid".

PERCENT `50%` `...` `99%`

Percentage of swing (delay the position of every second point in the quantization grid). **50%** (default) has no effect on notes position.

GRID `1/1` `...` `1/16`

Swing quantization grid, to define positions of second points. Most common grids are **1/8** and **1/16**.

VELOCITY `0%` `...` `100%`

Amount of swing accent. **50%** (default) has no effect on notes volume. Decrease this parameter to accentuate the first note. Increase it to accentuate the second note.

The Track Mode

mode has 3 purposes:
- Configure track layout (number of voices, type of track)
- Edit global settings (Midi channel, CV inputs, clock settings, midi thru)
- Mute/unmute the 8 tracks

Display

The display shows the 8 outputs (8 voices) of hermod in a grid. Each small rectangle shows the voice assignment: the content it will play in the middle, and the track it's assigned to in the top left corner.

When a voice is assigned to modulation, velocity, or aftertouch, you'll see a small gate ⌐ sign on the bottom right corner, meaning that you can use the related gate signal on that voice independently from the CV (using the voice number, displayed on the top right corner).

Voices 4 and 6 are assigned to velocity.

Selecting a track

To select the current track: scroll the encoder.

Track 2 is selected.

Note that in any modes, you can always hold **TRACK** and press a pad ▪▪▪▪ to select a new track without having to go back to track mode.

Mute/unmute tracks

You can mute and unmute track simply by pressing the related pad ▪▪▪▪.
Please note that muting a track will mute the recorded events in the sequencer, not the incoming MIDI or CV messages routed to this track.

Voices layout

Thanks to Hermod architecture, the 8 voices can be configured to perfectly fit your eurorack system. Tracks are "polymorphic", that means that you can assign them to output mono or poly notes, velocities, aftertouches, modulations or gates.

1) Select the track you want to configure:

1 NOTE	2 NOTE	3 NOTE	4 NOTE
5 NOTE	6 NOTE	7 NOTE	8 NOTE

Default layout. Track 3 is selected.

2) Press ⬚X⬚ to launch the configurator (or click the encoder and select "layout"), and select the number of voices you want to use:

```
NUMBER OF VOICES:
  3 VOICES
  4 VOICES
  5 VOICES
```

The Track 3 will control 4 voices (= 4 CV outputs)

3) Select the actual layout for these voices:

```
LAYOUT:
 POLY
 POLY + VEL
```

The Track 3 will output notes (with polyphony) and note velocities. As the track was set to control 4 voices, 2 voices will control notes, and 2 voices will control velocities.

4) The default screen allows you to see your track configuration in a flash:

```
1       2       3       3      4:
NOTE   NOTE   NOTE   VEL   ♩
3       3      6 7      8
NOTE   VEL  ♩ NOTE   NOTE
```

Track 1 = note mono (voice 1)
Track 2 = note mono (voice 2)
Track 3 = note poly + velocities (voices 3 + 4 + 5 + 6)
Track 4 = gate only (because the CV output is used by Track 3)
Track 6 = gate only (because the CV output is used by Track 3)
Track 7 = note mono (voice 7)
Track 8 = note mono (voice 8)

In this example, there are 7 tracks: 4 mono tracks that controls only notes, one polyphonic track that controls notes and velocities (on 4 voices), and 2 tracks that outputs gates.
You always have 8 voices (the 8 CV/Gate outputs of Hermod), but the number of tracks can be variable. For example, you are free to set:

• 8 track (with 1 monophonic note) to control the 8 voices
• 1 track (with 8 polyphonic notes) to control the 8 voices
• 1 track (with 4 polyphonic notes and 4 velocities) to control the 8 voices

• 1 track (with 1 monophonic note, 1 velocity and 1 aftertouch) to control 3 voices, and 5 other tracks to control 5 remaining voices
• 8 track (with 8 CV LFO and 8 Gates) to control the 8 voices
• ...

Note that each sequence can have its own voice layout. For example, track 1 of sequence 1 can be configured differently than track 1 of sequence 2.
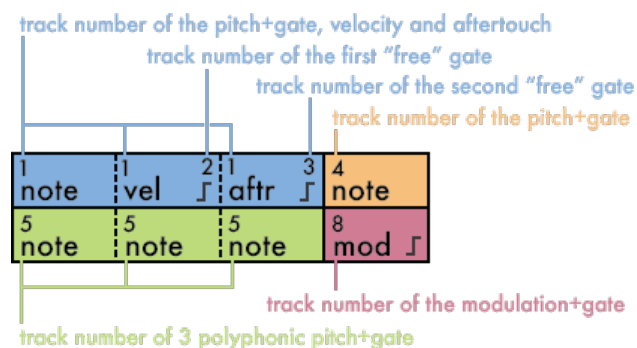*Per default: track 1 = mono note (voice 1), track 2 = mono note (voice 2), ..., track 8 = mono note (voice 8). This is the most common layout, so if you don't want to create polymorphic tracks, you don't have to use the layout configurator.*

Example of a voice layout

Let's say you want a 4-track layout:
• First track will control a monophonic voice, and will also output the velocity and the aftertouch. On the **track 1**, set "*3 VOICES*" and "*MONO + VELOCITY + AFTERTOUCH*".
• Second track will control a simple monophonic voice. On the **track 4**, set "*1 VOICE*" and "*MONO*".
• Third track will control a 3 voices (polyphonic) voice. On the **track 5**, set "*3 VOICES*" and "*POLY*".
• Fourth track will control a modulation voice (for exemple, a filter cutoff) . On the **track 8**, set "*1 VOICE*" and "*MOD*".
That will lead you to this layout:

On the 8 CV/Gate outputs, these 8 voices will correspond to:

track 1 note pitch
track 1 note velocity
track 1 note aftertouch
track 4 note pitch
track 5 note pitch
track 5 note pitch
track 5 note pitch
track 8 modulation

track 1 note gate
track 2 gate
track 3 gate
track 4 note gate
track 5 note gate
track 5 note gate
track 5 note gate
track 8 gate

cv   gate
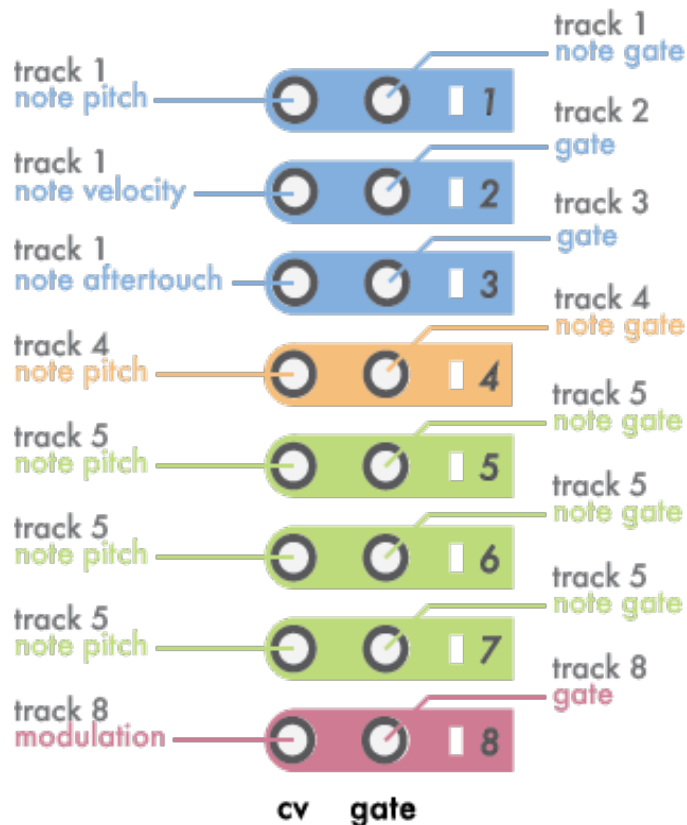
Note: this layout includes 3 "free" gates ⌐ on tracks 2, 3 and 8. That means that you can program gates on these tracks in **STEP** mode, allowing you to sequence drums, clocks, ...

Note vs. Modulation tracks

Hermod features 2 different types of track: **NOTE** and **MOD**.
● A **NOTE** track will play the recorded and incoming notes in the attributed voice(s).
● A **MOD** (modulation) track won't play the recorded CV note, just the gate message. Its purpose is to control CV modulation inputs (for exemple, the cutoff frequency of a filter). You can record a modulation track either by using the modwheel of the track channel, or by assigning a CV input in the settings. You can

use the gate ⌐ to control drum sequences, or use it as a clock by placing notes at a given time interval.
When a track uses a voice for velocity or aftertouch, you can use the gate output ⌐ of that voice in the same way by programming a sequence in the unused track.

Edit track menu

You can access the edit track menu by pressing the encoder. Here you can access layout configuration, copy, paste, and clear the selected track.

Note that copy, paste and clear track operation will also affect the effect section and pattern of the selected track.

The Sequence mode

In Hermod, sequences are groups of 8 tracks with their respective effects, patterns, ModMatrix and settings. It is a snapshot of the current state of the sequencer.

SEQ mode allow you to jump between those sequences. Using sequences, you can create different part of a song, and arrange them live or play them in a "song" that will loop a chain of sequences. Seq mode is very simple and has very few options.

Display

In **SEQ** mode, the screen will display current project name, sequence loop length, playback mode, the song chain, and a little overview of the tracks currently playing.

```
▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄|MY PROJECT
▄▄▄▄▄▄  ▄          |LOOP:  8
▄▄▄▄▄▄▄▄▄▄          |PLAY:  SEQ
▄▄▄▄▄             
▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄     
```

Selecting a sequence

To select a new sequence, simply press the associated pad ▪▪▪▪. If the sequencer is playing, the sequence will be launched depending on the playback mode parameter.

Press and hold Y and scroll the encoder to edit one of the 3 "PLAY" mode:

• Sequential (default): The sequence change will happen at the next beat corresponding to the loop length parameter
• Jump: the sequence will change immediatly and continue to play the new sequence at the same clock position
• Restart: the sequence change will happen at the next step and the new sequence will start at the beginning.

Sequence loop length

The sequence loop length has two purposes: the position of the sequence change when in sequential mode, and the number of steps played in a sequence while a song is set.
To edit the seq loop length, press and hold X and scroll the encoder.

Setting a song

You can set up a chain of up to 8 sequences using a "song". To set a song, press and hold X , and press the PAD to add sequences to the song. Press X again to delete the song.

```
          |MY PROJECT
          |LOOP:  8
          |PLAY:  SEQ
          |4▸6▸7▸1◂2▸5▸8▸1
```

Edit sequence menu

You can access the edit sequence menu by clicking the encoder. Same as the other modes, you can copy, paste and clear the selected sequence, as well as access the project manager menu.

RANDOMIZER

Enter the Randomizer menu

Hermod boasts a powerful randomizer. To enter the randomizer menu, select **STEP** mode, then press the encoder and select "randomize".

```
RANDOMIZE:
  RANDOMIZE PATTERN
  RANDOMIZE PITCH
  RANDOMIZE LENGTH
```

The randomizer menu.

TIP This feature is very powerful to create crazy note patterns in a flash. You can use a scale effect to make the result more "musical".

Randomizer menu

• Randomize pattern will delete the existing pattern and add random notes according to the parameters.
• Randomize pitch changes the notes pattern pitch.
• Randomize velocity changes the notes velocities.
• Randomize length changes the notes lengths.

The "rand parameters" submenu allows you to edit the range of the randomizer: quantize grid, number of note range, pitch range, velocity range and length range:

```
RANDOMIZER PARAMETERS:
  QUANTIZE       |OFF
  MIN NUM NOTES  |4
  MAX NUM NOTES  |16
```

PROJECT MANAGER
Enter the Project Manager menu
To enter the Project Manager menu, select **SEQ** mode, then press the encoder and select "project".

```
PROJECT:
 LOAD PROJECT
 SAVE PROJECT
 SAVE PROJECT AS
```

The project manager menu.

Project Manager menu
• Load project: load a project from the SD card into Hermod's player, note that loading a project while Hermod is playing won't reset the clock, the newly loaded project will be playing immediatly. Don't forget to save the current project before loading a new one!

• Save project: save the current project, if it is a new project, you'll be prompted to add a name.

• Save project as: When working on an existing project, this allow you to save it with a new name.

• Delete project : Allows you to browse the project list and select a project to be deleted. Note that this operation is irreversible!

HERMOD SETTINGS
Enter the settings

You can access the global settings by pressing `Y` in **TRACK**
mode.

```
SETTINGS:
 CLOCK SETTINGS
 MIDI CHANNEL
 MIDI THRU
```

Clock settings

Hermod can be the master, or can be slaved, thanks to its Midi/
Host/Device/CV interface.

```
CLOCK SETTINGS:
 CLOCK SOURCE |HOST PORT
 CV RESET     |OFF
 CV CLOCK DIV |1/1
```

CLOCK SOURCE

`INTERNAL` Hermod will use it internal clock.

`MIDI/HOST/DEVICE` Hermod will be slaved to the selected MIDI
clock.

`CV A/B/C/D` Hermod will be synchronized to the selected CV
inputs. If you do not configure a clock start CV port, press (start)
to start/stop the sequencer.

CV RESET `OFF` `CV A` `CV B` `CV C` `CV D`

Select one of the CV input to act as a reset clock, if none is selected, the PLAY button will reset the clock.

CV CLOCK DIV `1/8` `1/4` `1/2` `1/1`

Select the clock division of the incoming analog clock, usually modular clocks send quarter notes (¼)

CV CLOCK OUT `OFF` `GATE 1` `...` `GATE 8`

Program one of the gate output to act as a global clocking output. If you wish to use more than one clock, you can use the gate signal of a pattern as a clock.

CLOCK DIV OUT `1/8` `1/4` `1/2` `1/1`

Select the speed of the output analog clock.

Note: When Hermod uses an analog clock source, the engine won't "advance" by a certain amount of pulses on each tick, rather, the internal clock of Hermod's will synchronize to the signal, this allows to multiply or divide the incoming clock, and also to still be able to use the swing effect when using analog clocking.

Midi channels

Configure MIDI channels of each track:

ACTIVE TRACK	1	...	16	OFF
TRACK 1	1	...	16	
TRACK 2	1	...	16	
TRACK 3	1	...	16	
TRACK 4	1	...	16	
TRACK 5	1	...	16	
TRACK 6	1	...	16	
TRACK 7	1	...	16	
TRACK 8	1	...	16	

Note: The "active track" parameters set up a MIDI channel that will control the active track and the **STEP** learn note.
If you want to receive midi program changes (PC) to select the current Hermod played sequence (from 1 to 8), there is an option at the end of the list:

PROG CHANGE	OFF	ON

Midi Thru

Configure MIDI ports routing, handy when using hermod has a MIDI hub. For exemple, you can route all incoming messages in the MIDI port to the USB host port.

MIDI > MIDI	OFF	ON
MIDI > HOST	OFF	ON
MIDI > DEVICE	OFF	ON
HOST > DEVICE	OFF	ON
HOST > MIDI	OFF	ON
DEVICE > HOST	OFF	ON
DEVICE > MIDI	OFF	ON

CV input settings

Configure the CV source of each track. Sources are:

ACTIVE TRACK

CV/Gate AB CV IN = input A, Gate IN = input B.
CV/Gate CD CV IN = input C, Gate IN = input D.
Mod A/B/C/D Modulation signal from input A/B/C/D for CV recording.

TRACK 1
TRACK 2
TRACK 3
TRACK 4
TRACK 5
TRACK 6
TRACK 7
TRACK 8

Same parameters as for **ACTIVE TRACK**.
Note that when a CV signal is selected as an input, you will only be able to hear the incoming signal when the track is either empty, muted, or recording. Otherwise you'll hear the recorded pattern.

QUANTIZE NOTE **OFF** **ON**
Quantize the pitch of CV in notes to the nearest semitone.

CV IN RANGE **-5V > +5V** **0V > +5V**
Set the voltage range of the CV inputs.