



USER'S MANUAL

1.99.05 - Pre-2.0 *ALPHA RELEASE* (August 3, 2022)

THE CENTRE



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Part I

Before Start

Software Update

Software Update is the most important process to keep your unit updated with the latest features and bug fixes as well as to keep it safe from breaking during update process. Updating process is fairly simple from user perspective although there might be some issues with downloading files because of specific Internet Browser behaviour during downloading.

1. Download latest firmware release from Github https://github.com/1V-0ct/3318_the_centre_releases/releases
2. Copy downloaded firmware file into SD Card (make sure that the filename is: 'the_centre_v4.fwx' and it is in root directory of your card)
3. Insert SD Card into The Centre
4. Power on The Centre or perform Reset
5. Go to [[System Menu]] and check firmware version.

■ *NOTE: Sometimes Safari, Explorer and other browsers add some extra bits to the filename like '(1)' or '_1' to indicate that it is different file than already downloaded. Please rename the file to the correct name.*

Calibration

TL;DR: I came here to calibrate and not read poems... Here is YouTube video that shows Calibration of The Centre:

<https://www.youtube.com/watch?v=uEFr7RkuP7k>

2.1 Why Calibrate?

In the ideal world things are well... ideal. Although in real world things are not perfect and this is where term tolerance kicks in. Every electronic component has tolerance. Usually measured in percentage and usually this tolerance is like %1 for resistors and %5 for capacitors. Each circuit contains multiple electronic components and tolerances of those components add together making quite a huge percentage tolerance of the circuit. When circuit is operating the tolerances of this circuit do not change. Tolerance just change component properties at manufacturing stage. Therefore the circuit is always stable but might be slightly off.

Of course there are different ways to deal with the non-ideal circuits. Some of them are expensive (on hardware level) and some of them are quite cheap. One of those methods is calibration.

Calibration allows to establish default values returned by circuit under controlled environment and use them as reference points.

2.2 Calibration of music instruments

Many music instruments need calibration. Even tuning the piano or guitar. For digital or hybrid modules like The Centre the calibration process is to connect a well calibrated source of pitch that will provide stable value of voltages at two or more reference points. Usually two points are enough. The software will recalculate all the values and will apply proper algorithms to always generate correct pitch for voltages.

2.3 Calibrating The Centre

The Centre needs two voltages separated by 2V. In other words, the centre needs a Control Voltage (CV) for two C notes separated by 2 octaves. Ideally that would be C1 and C3 but many current MIDI keyboards supply only voltages between 0V and 5V which translates to C2 and C8. Yep, there is no standard for V/Oct assignemnt of voltage to notes so at 1V/OCT we assume that C2 is 0V. It does not matter anyway, because every V/Oct input has Octave and Note correction anyway.

To calibrate V/OCT inputs press two middle buttons (button 2 + 3) and it will bring System Menu. From there select "Calibrate" and press encoder down (select).

Now every channel can be calibrated individually or 4 inputs at the same time. Use encoder to select channel or all channels (when calibrating all channels use signal splitter to send CV voltage for calibration (pitch) to all inputs).

Now follow instructions on screen. First send any note from your keyboard except note C (we calibrate by C notes) and press Start (button 1). Now press any low octave C note (lets say C3) wait 10 seconds for next instructions, move two octaves up and send note C5. Wait 10 seconds and your unit is fully calibrated.

Now you can Save your calibration settings and enjoy your fully calibrated unit.

What's In The Box

Your Eurorack module comes packaged in the box together with:

Accessory bag

There is tiny bag included with your The Centre.

Inside this bag you will find:

1. 8 small caps for knobs
2. 4 small caps for buttons
3. 5 sets of washer + nut

https://github.com/1V-Oct/3318_the_centre_releases.wiki/images/accessory_bag.jpg

The Buttons

You might want to alternate between black and white buttons. It is very easy to change button caps. Just use pliers to remove the cap and put the other one.

Knobs Caps

The 8 "attenuator" knobs are naked because if you want to change face plate those caps sit very tight and they are hard to remove therefore I haven't installed them. It's very easy to install. Just position the pot in centre and put the cap pointing to the top. Thats it.

Washer + Nut Sets

I haven't put all those under big Level knobs. They are not necessary because there is no pressure applied and 4 already secures plate well. If you want all of them attached that's why they are inside this bag.

BPM

Many modules require clock to ensure synchronisation to given time interval requirements. Whether this is simple Random Note Generator (RNG) or Low Frequency Shaper (LFS) the supplied clock ensures that duration of quarter note in one module equals duration of quarter note in another module. There are multiple standards or just ad-hoc designs defining different number of clock pulses per beat. The most popular one is MIDI standard that established 24 clocks per quarter note (24 PQN).

The Centre by default uses 24 clocks per quarter note (beat) but this value can be changed globally for all modules. That setting can be adjusted in Global Settings and can vary between 24, 12, 6, 4, 3, 2 and 1 clocks per beat.

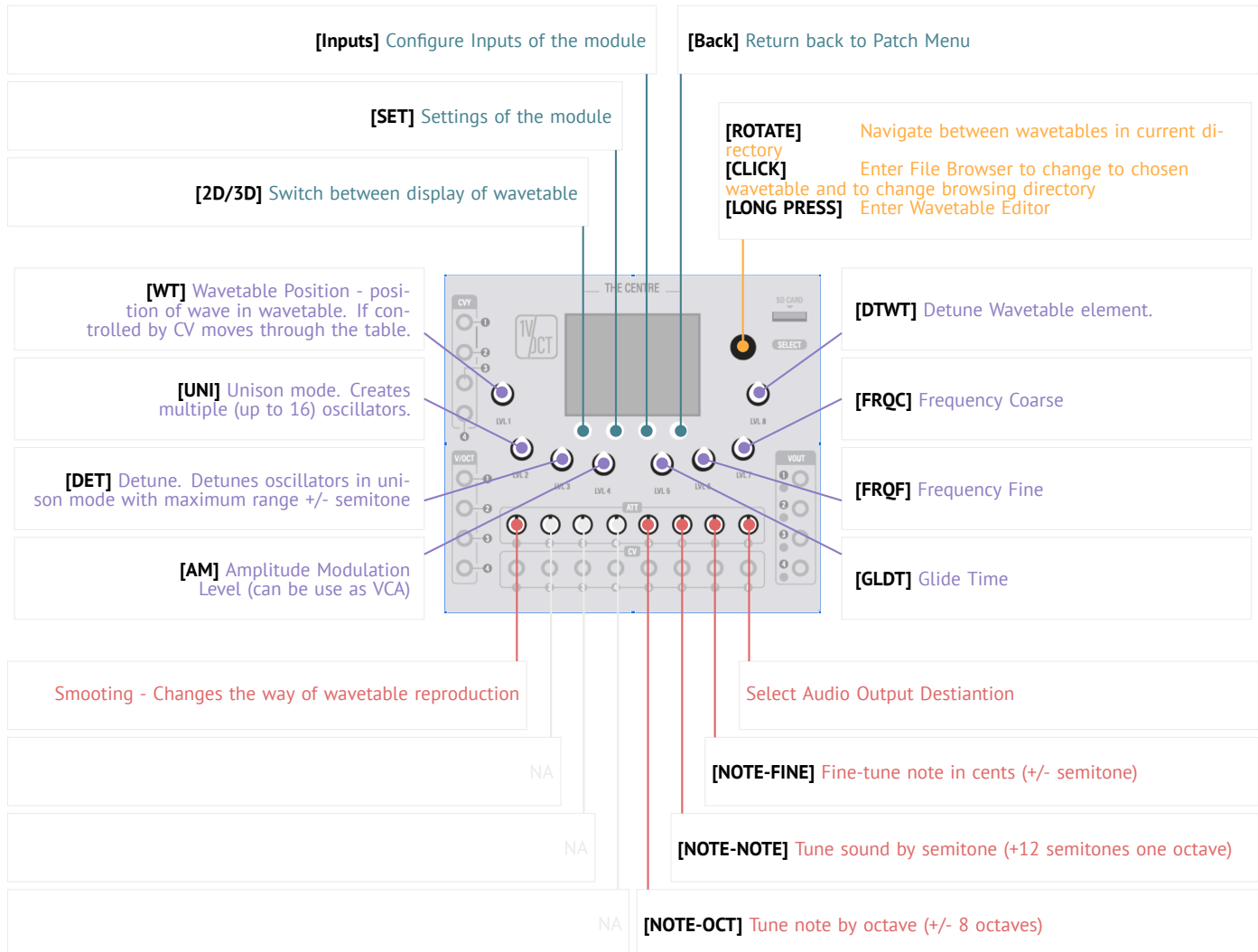
- *When using MIDI to control The Centre it is recommended to keep 24 CPQN (Clocks Per Quarter Note) to adhere to MIDI standard.*

Beats Per Minute (BPM) is a measure used in electronic music to define time interval of music. Beat in electronic music is equivalent to quarter note and there are 4 quarter notes to bar (4/4 tempo). The Centre by default configures all modules to work at 120BPM. 120 Beats Per Minute that's 120 beats per 60 seconds and in the end one quarter note duration is half second or 500 milliseconds (ms). To change default tempo it is necessary to provide modules with clock input via Clock CV (CLK) on modules inputs. The clock can be submitted via CVY input, MIDI input or generated internally via Clock Module (CLK). By adding CLK module we can generate Clock for other modules derived from user defined tempo.

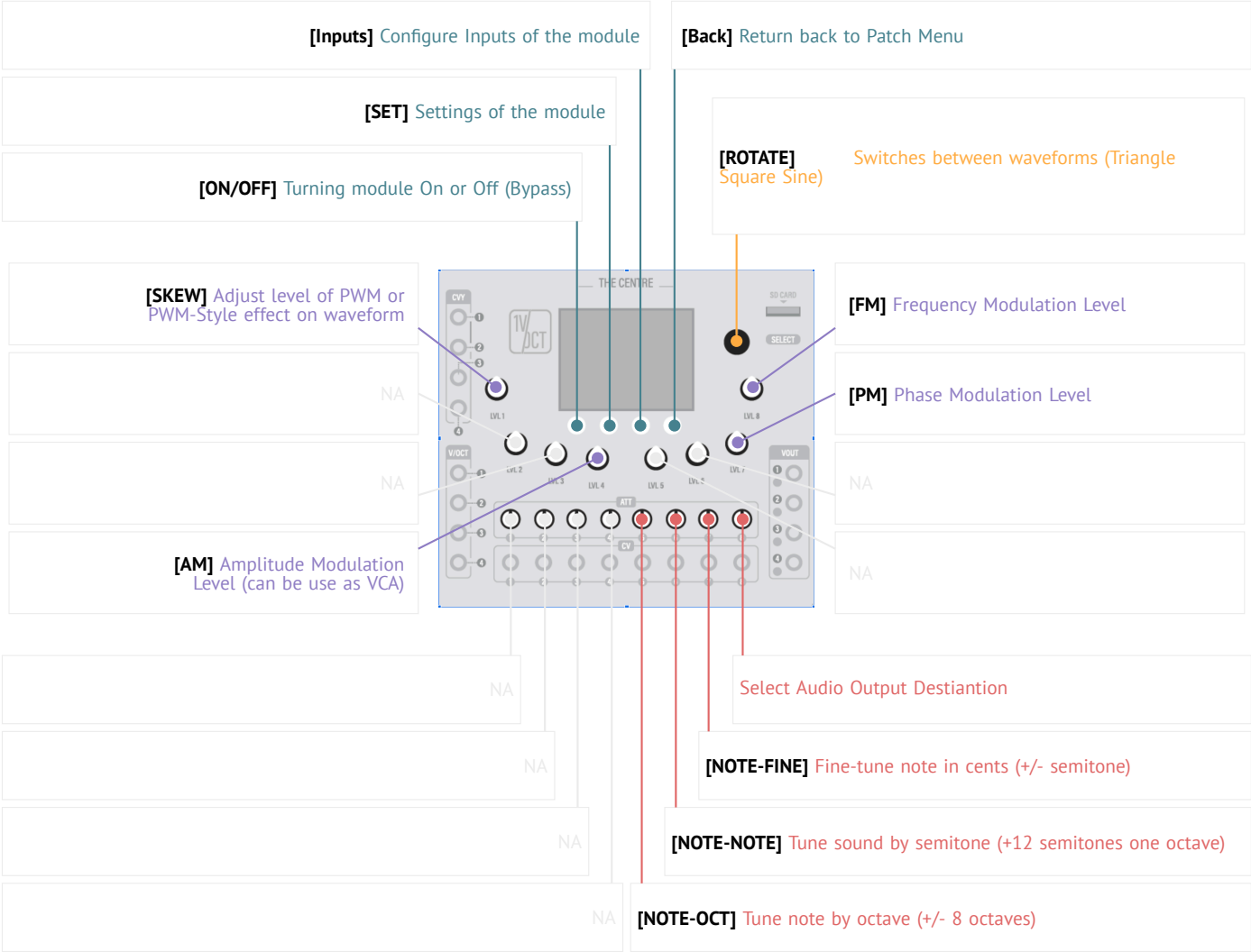
Part II

Module Reference

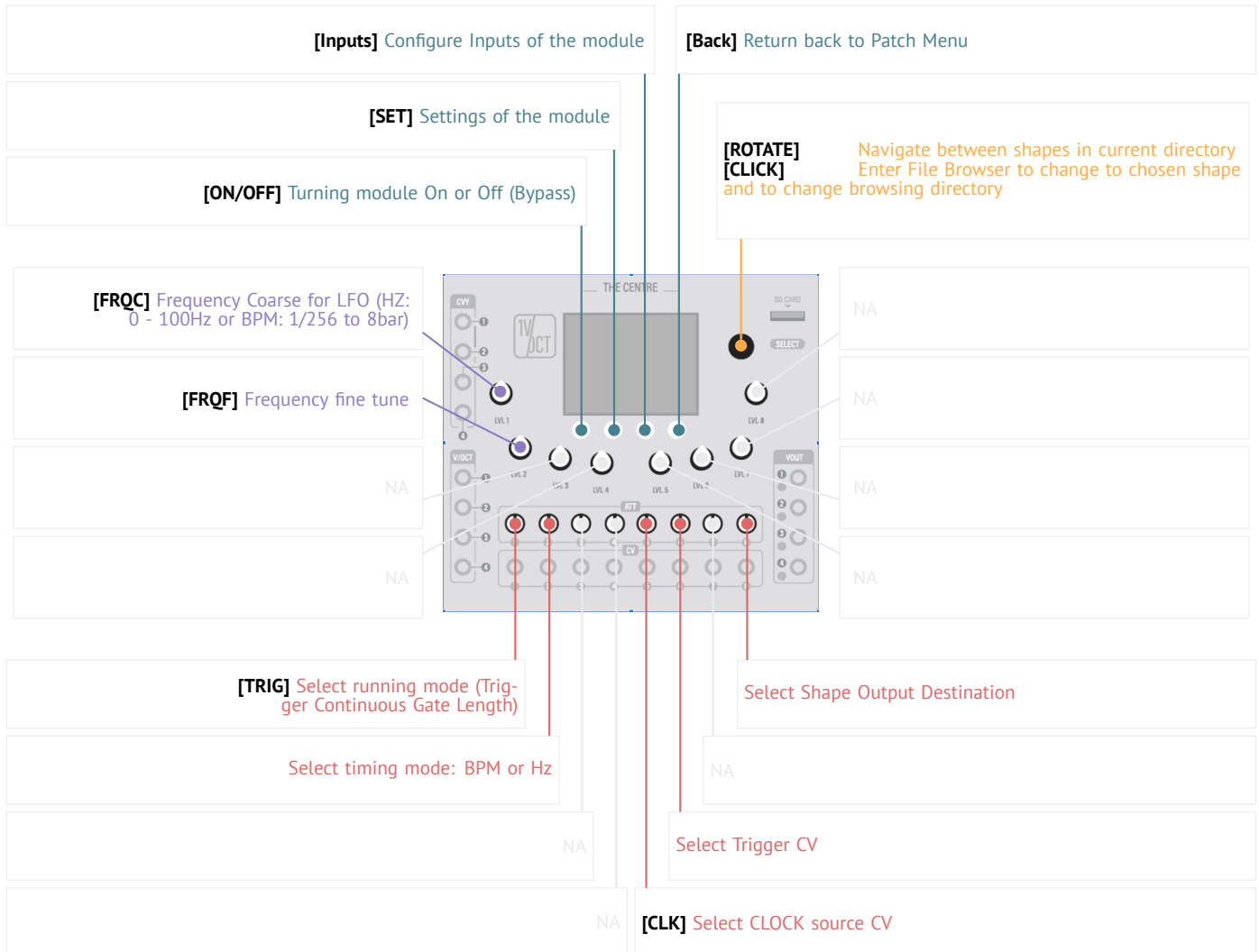
WTO - Wavetable Oscillator



VCO - Voltage Controlled Oscillator



LFS - Low Frequency Shaper



LFS - Shape Editor

NA

[DEL] Deletes current point

[ADD] Adds point to the shape

[FROC] Frequency Coarse for LFO (HZ:
0 - 100Hz or BPM: 1/256 to 8bar)

[FROF] Frequency fine tune

Modify point velocity (Y-axis)

Modify point position between
neighbouring points (X-Axis)

[TRIG] Select running mode (Trig-
ger Continuous Gate Length)

Select timing mode: BPM or Hz

NA

NA

NA

[Back] Return back to LFS Screen

[ROTATE]
shape
[CLICK]

Navigate between points and segments of
Add new point

Change curve of next segment

NA

NA

NA

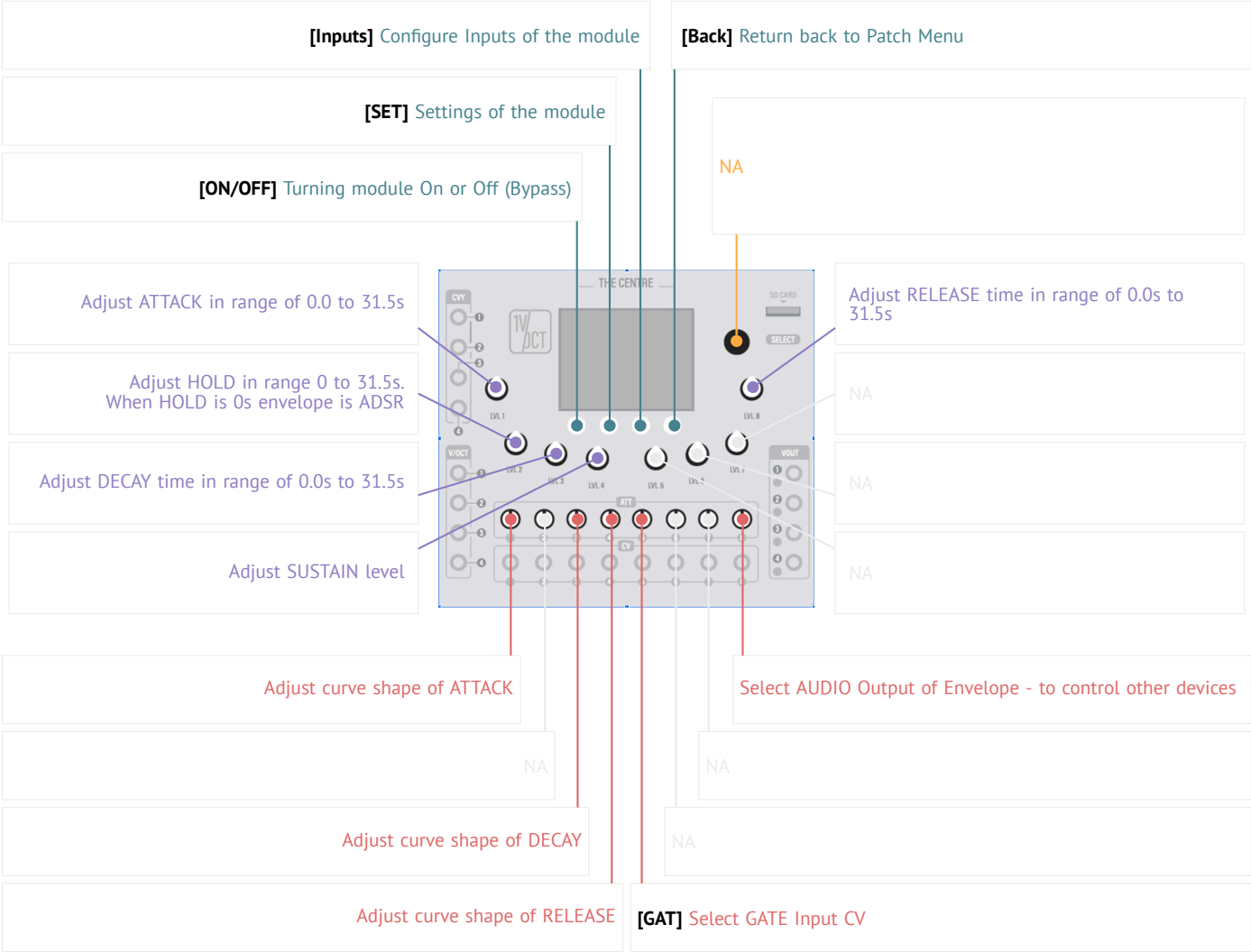
Select Shape Output Destination

NA

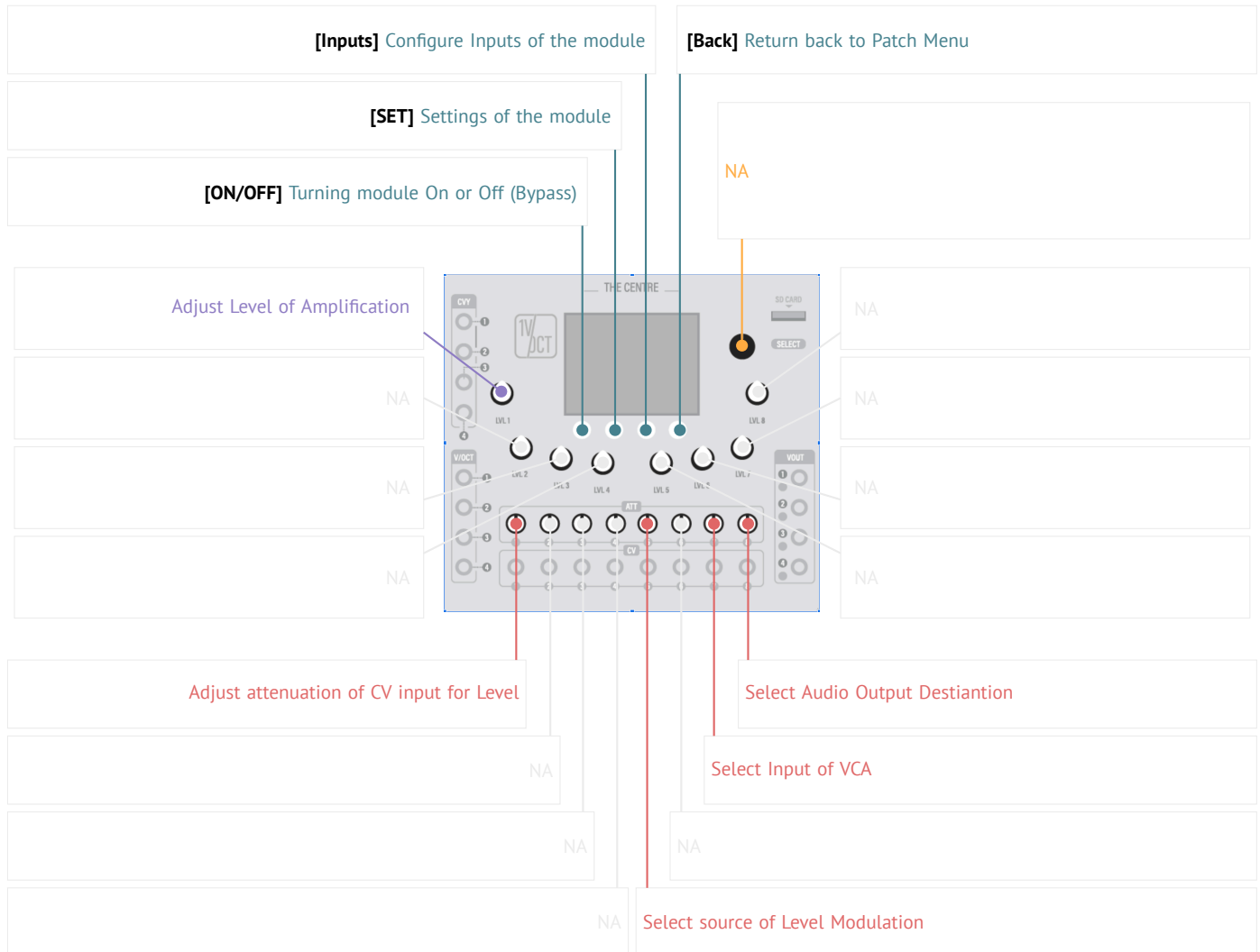
Select Trigger CV

[CLK] Select CLOCK source CV

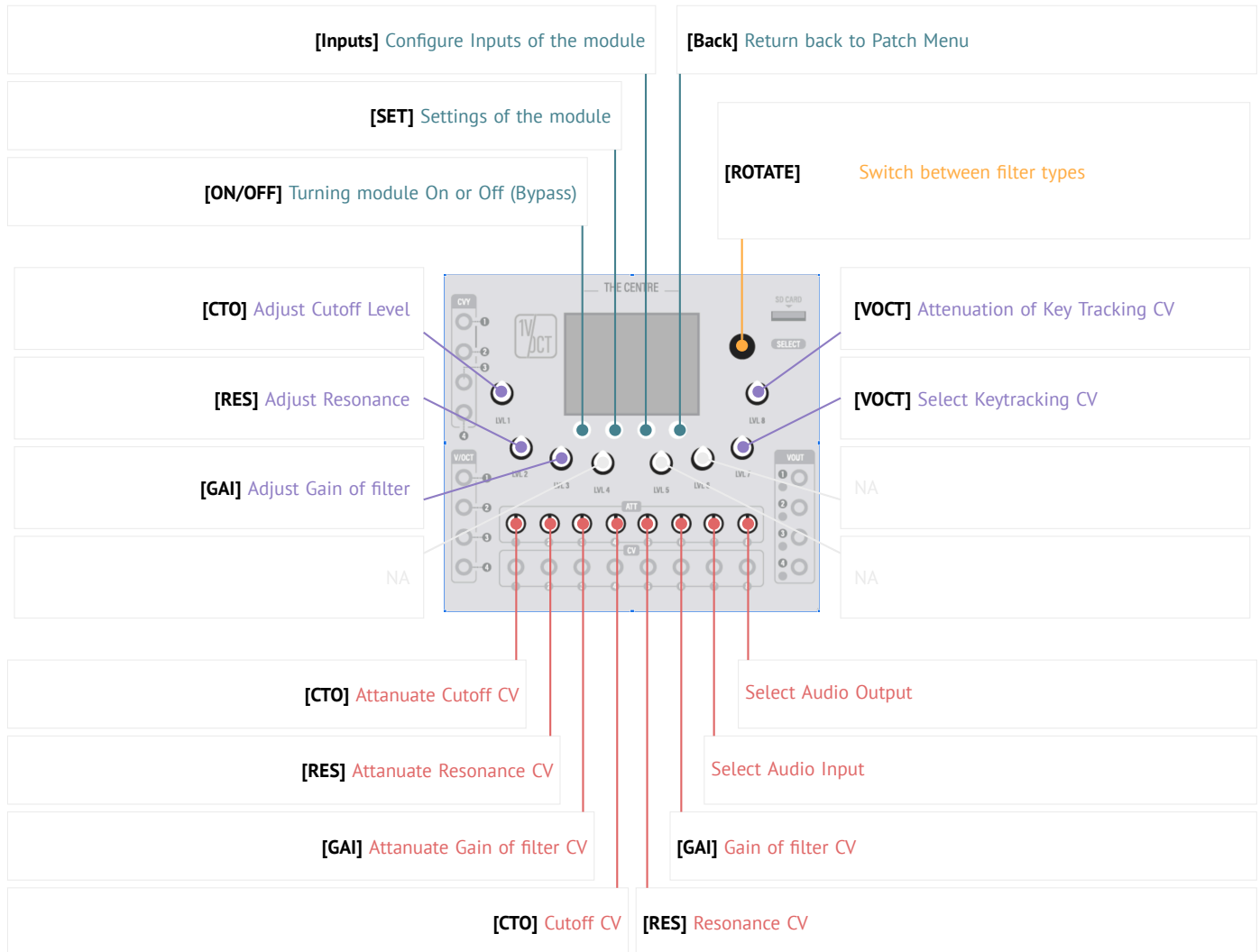
ENV - Envelope Genererator



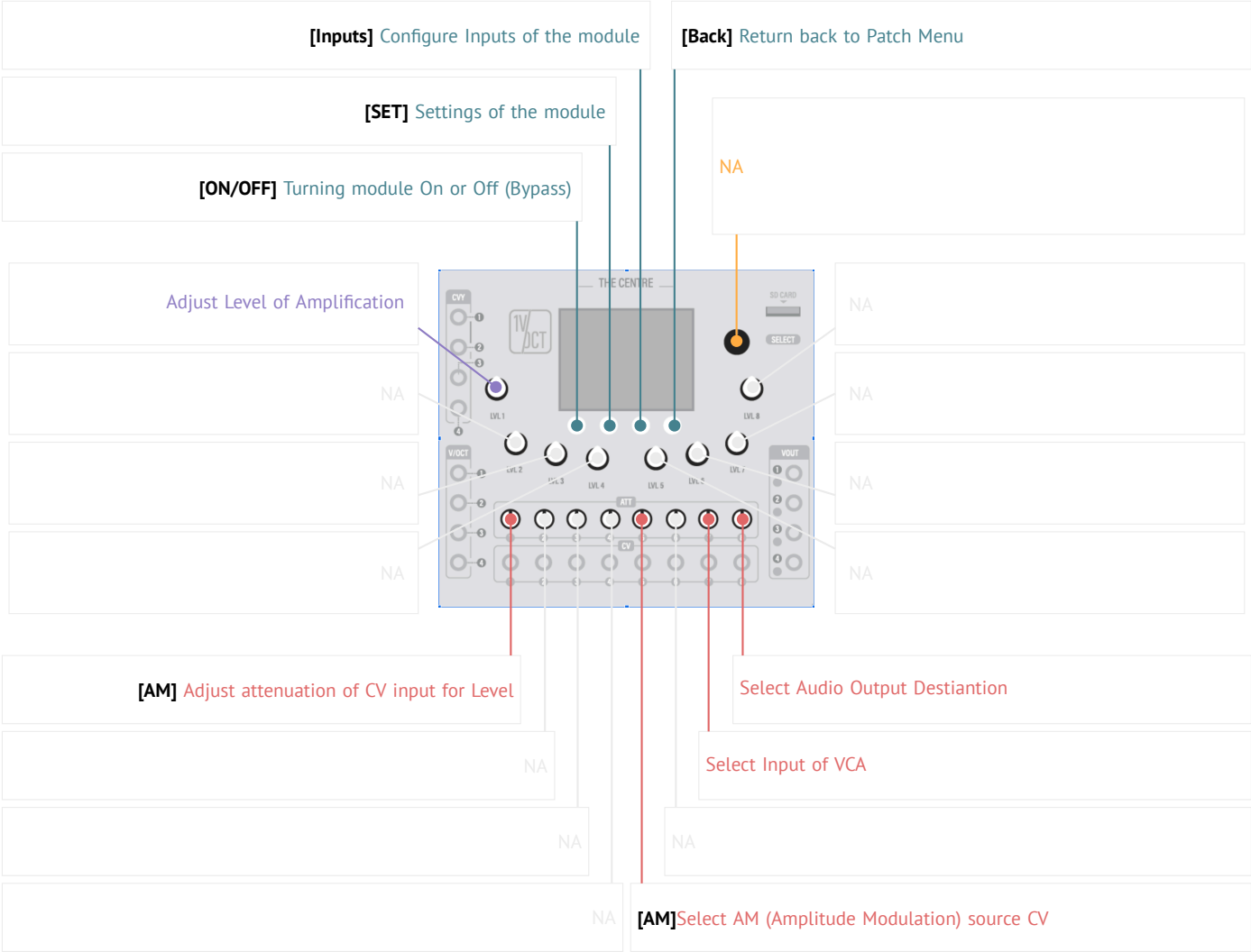
VCA - Voltage Controlled Amplifier



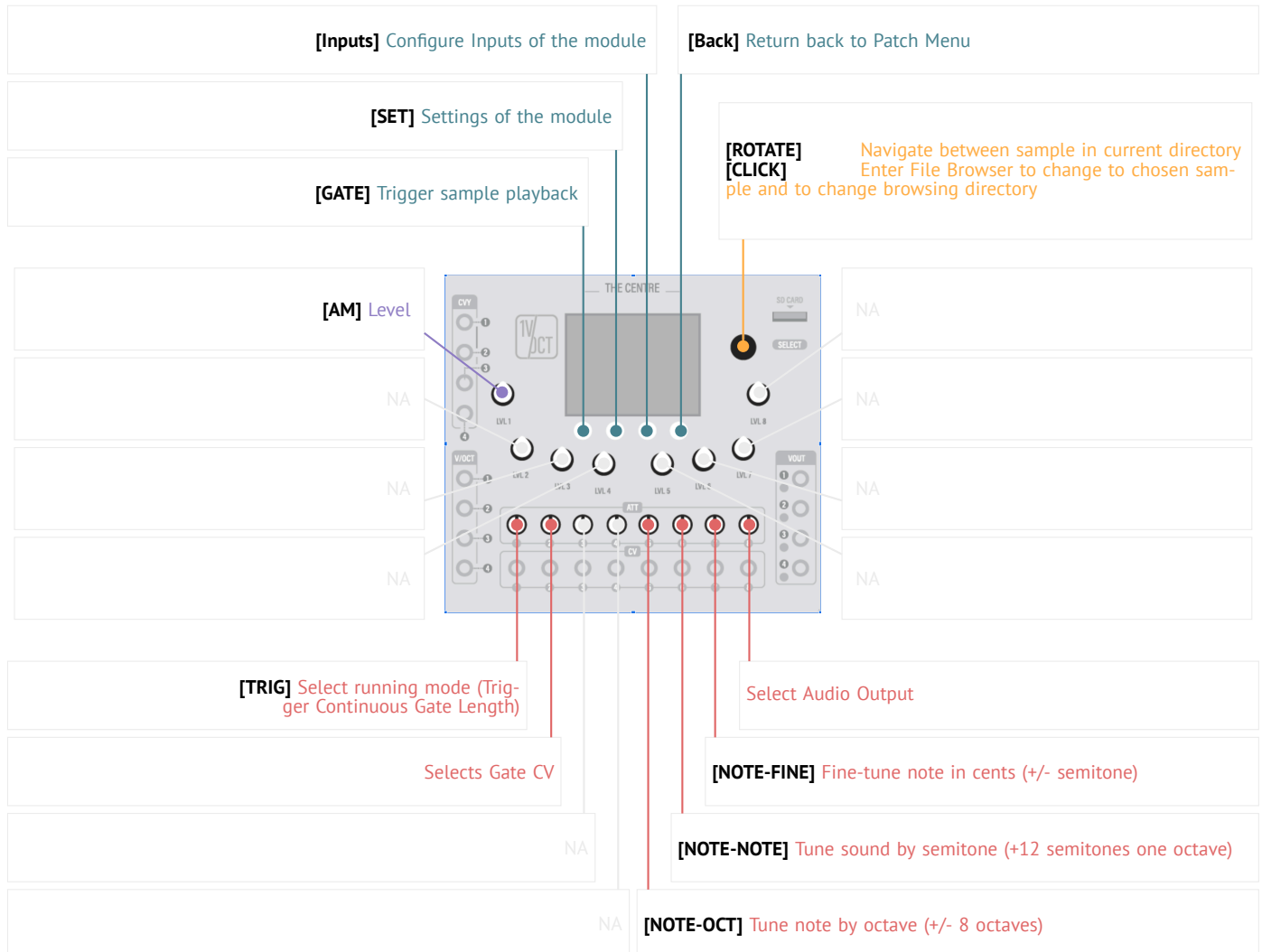
VCF - Voltage Controlled Filter



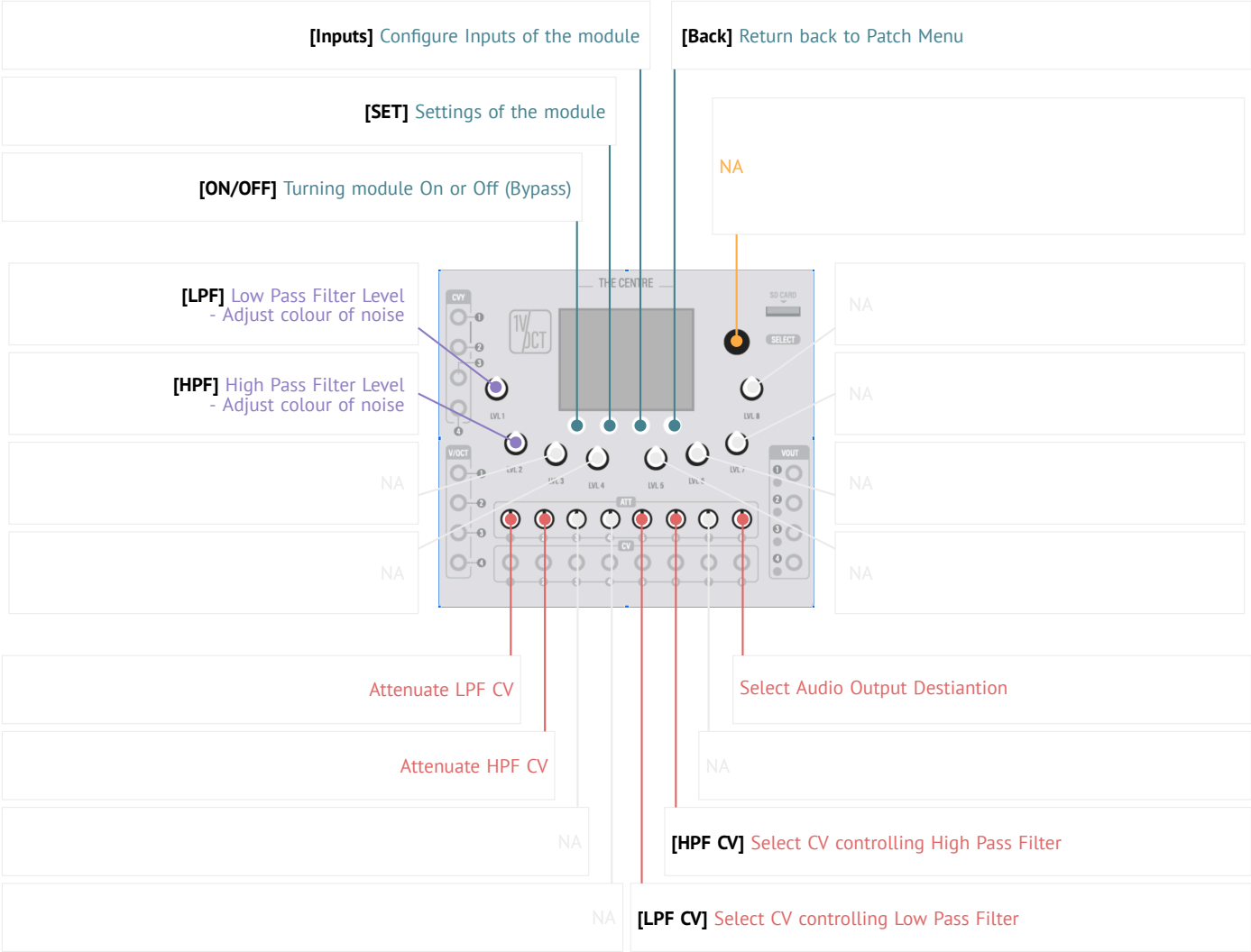
BRM - Balanced Ring Modulator



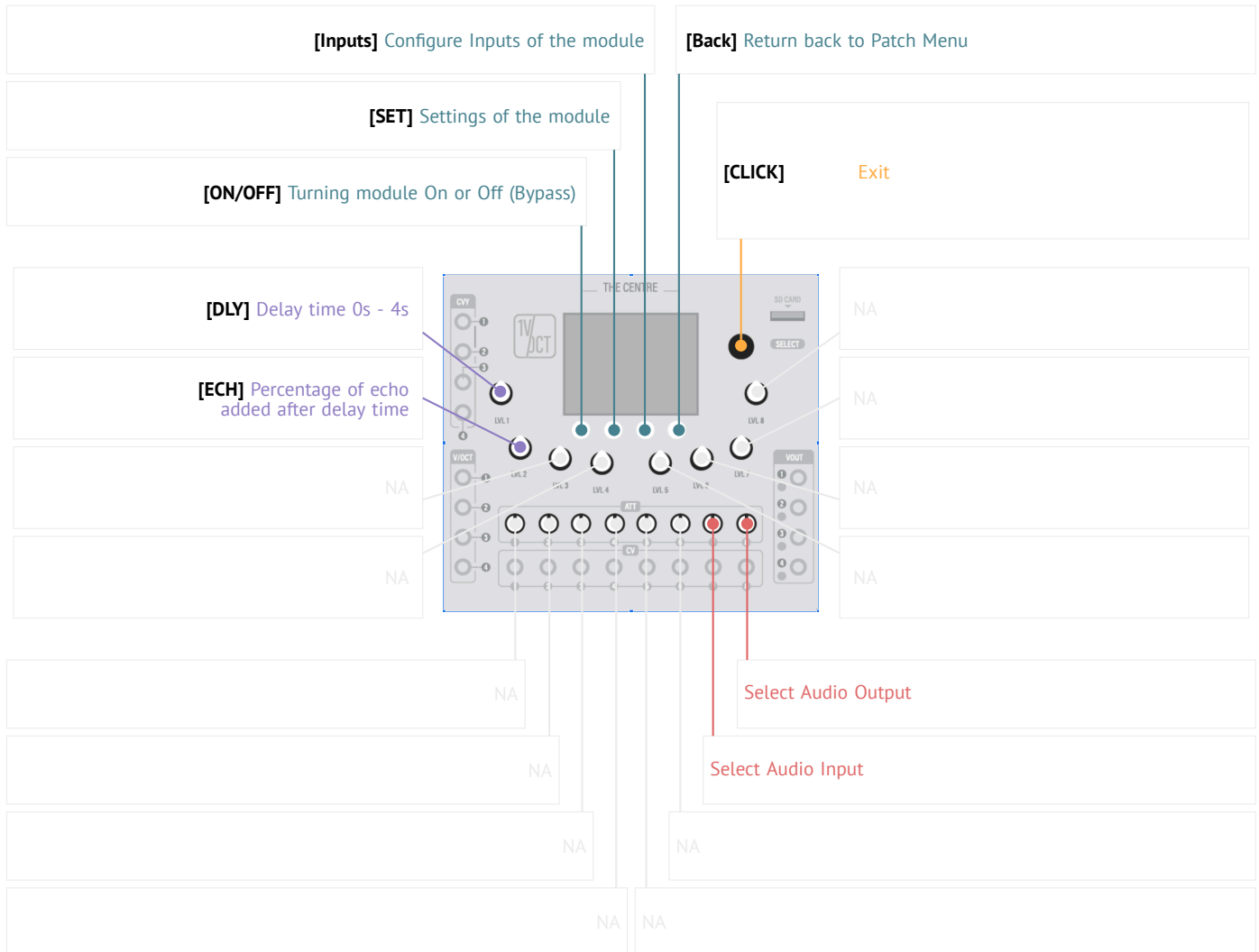
SMP - Sample Playback



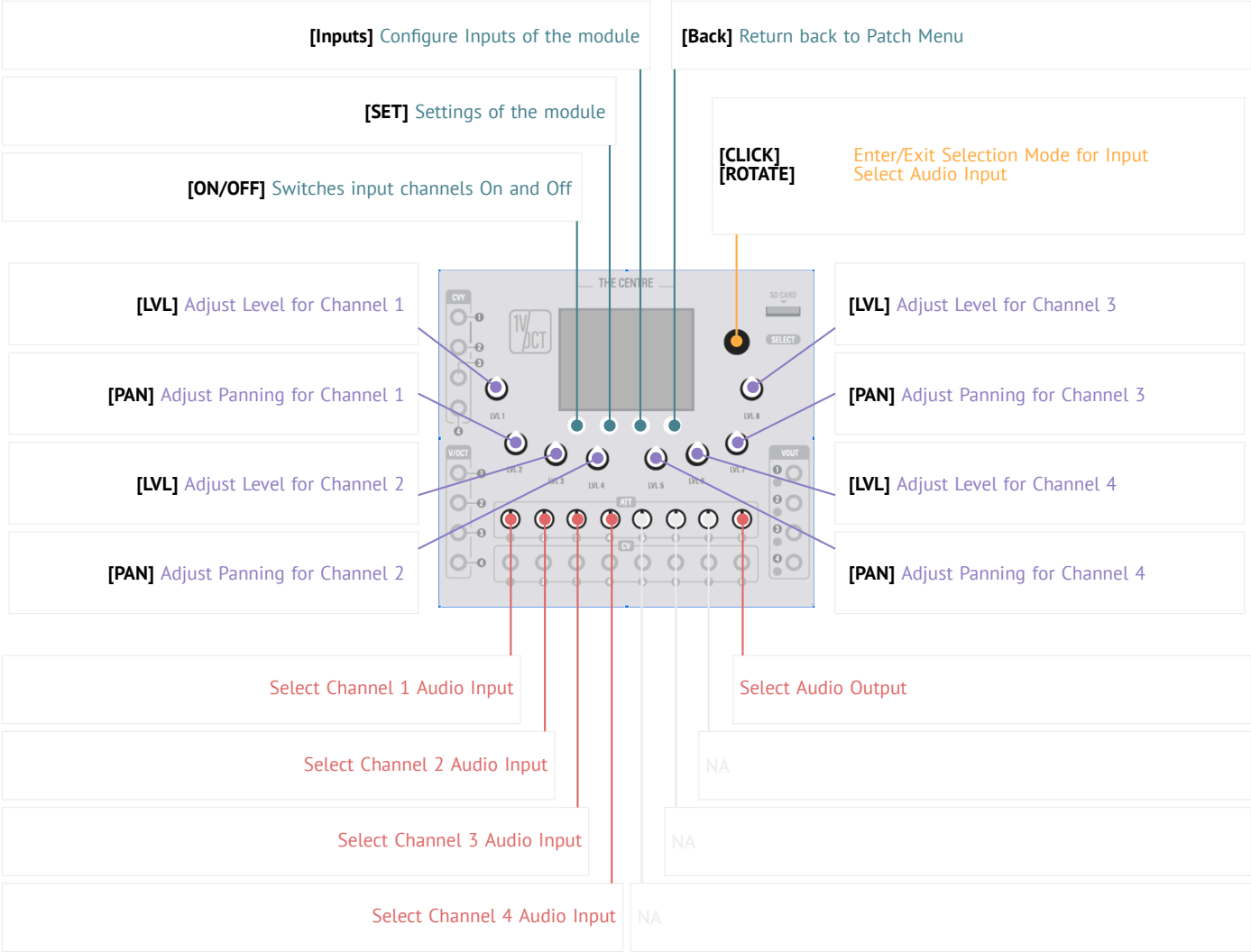
NOI - Noise Generator



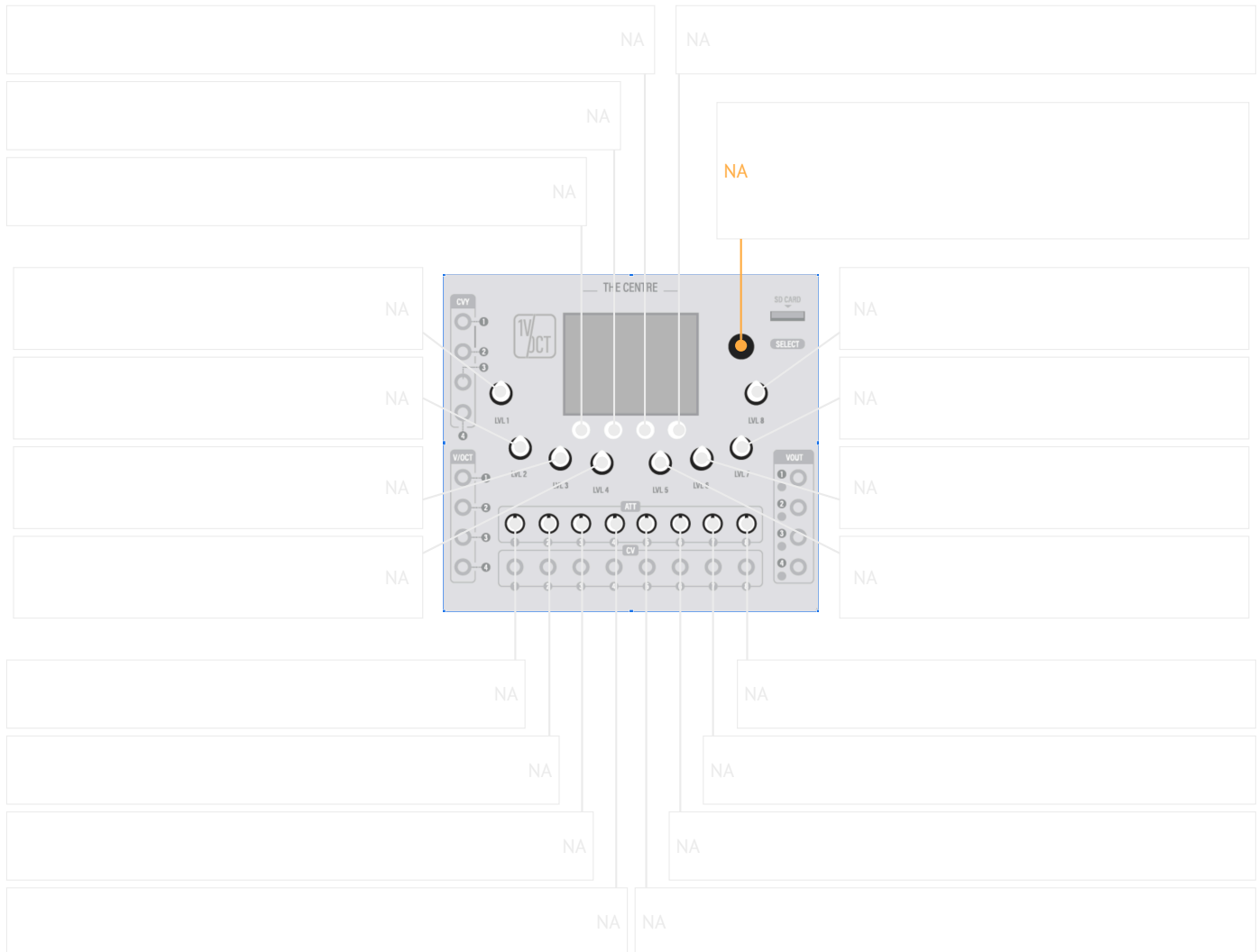
DLY - Delay



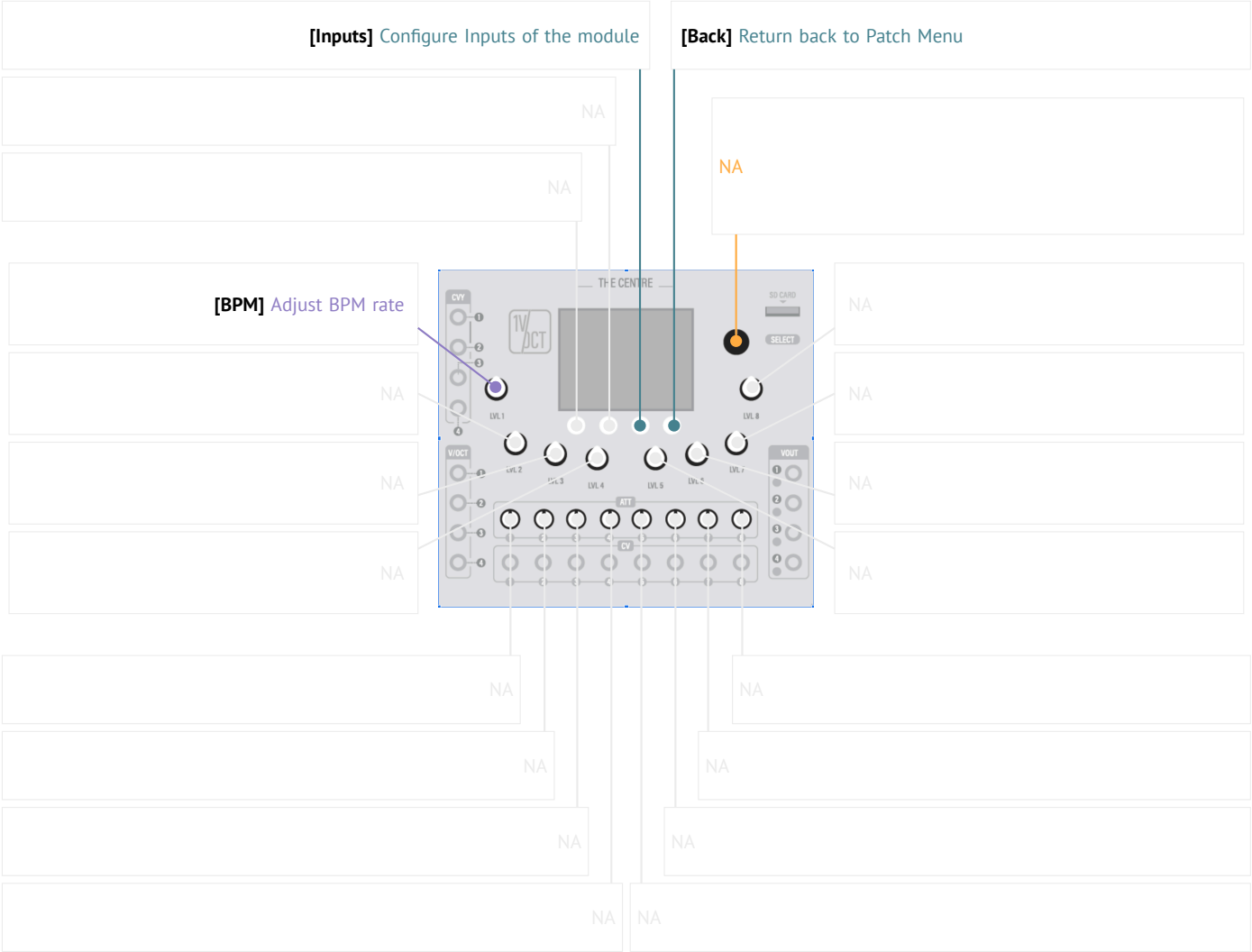
MIX - Voltage Controlled Panning Mixer



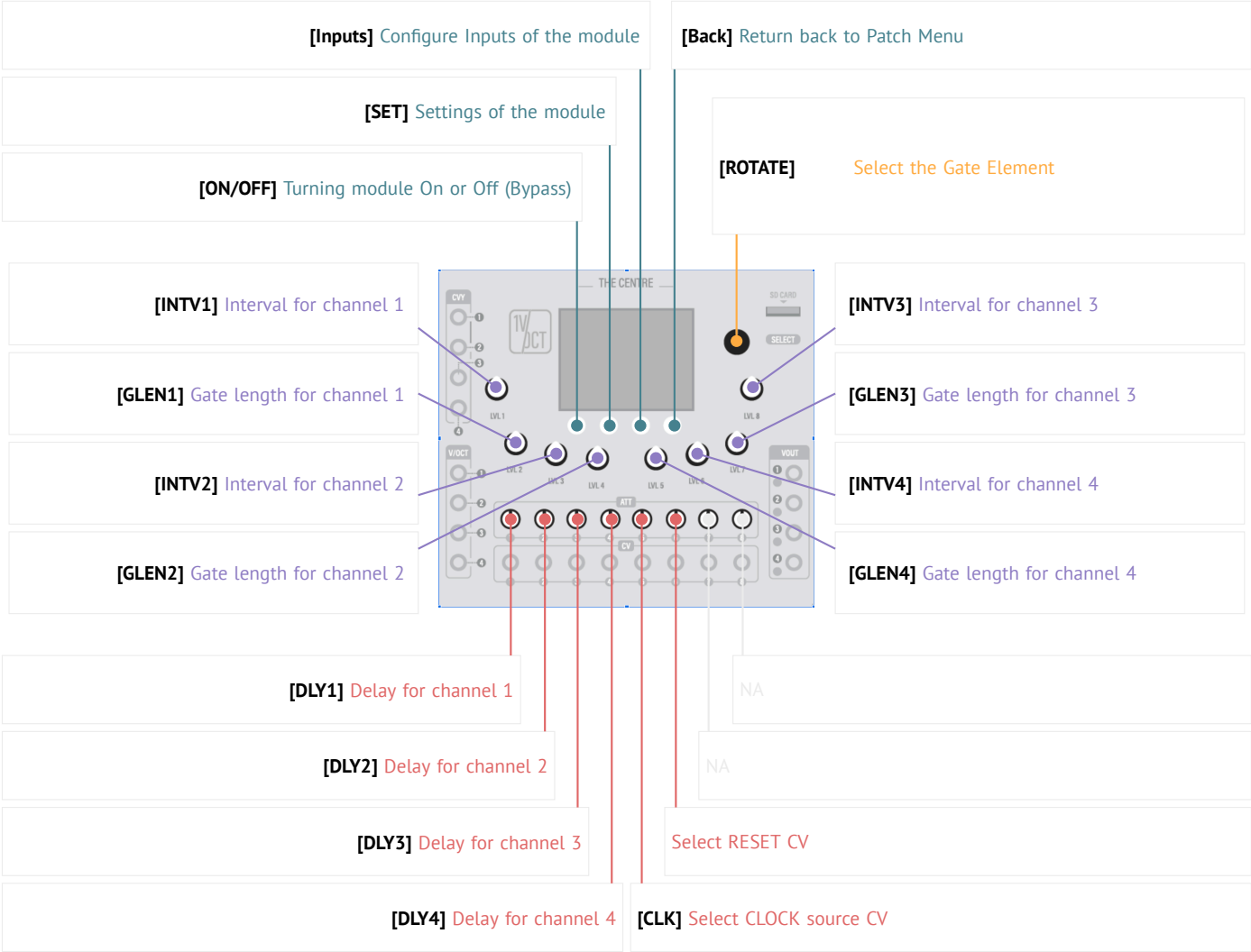
CVM - CV Mix and Multiple



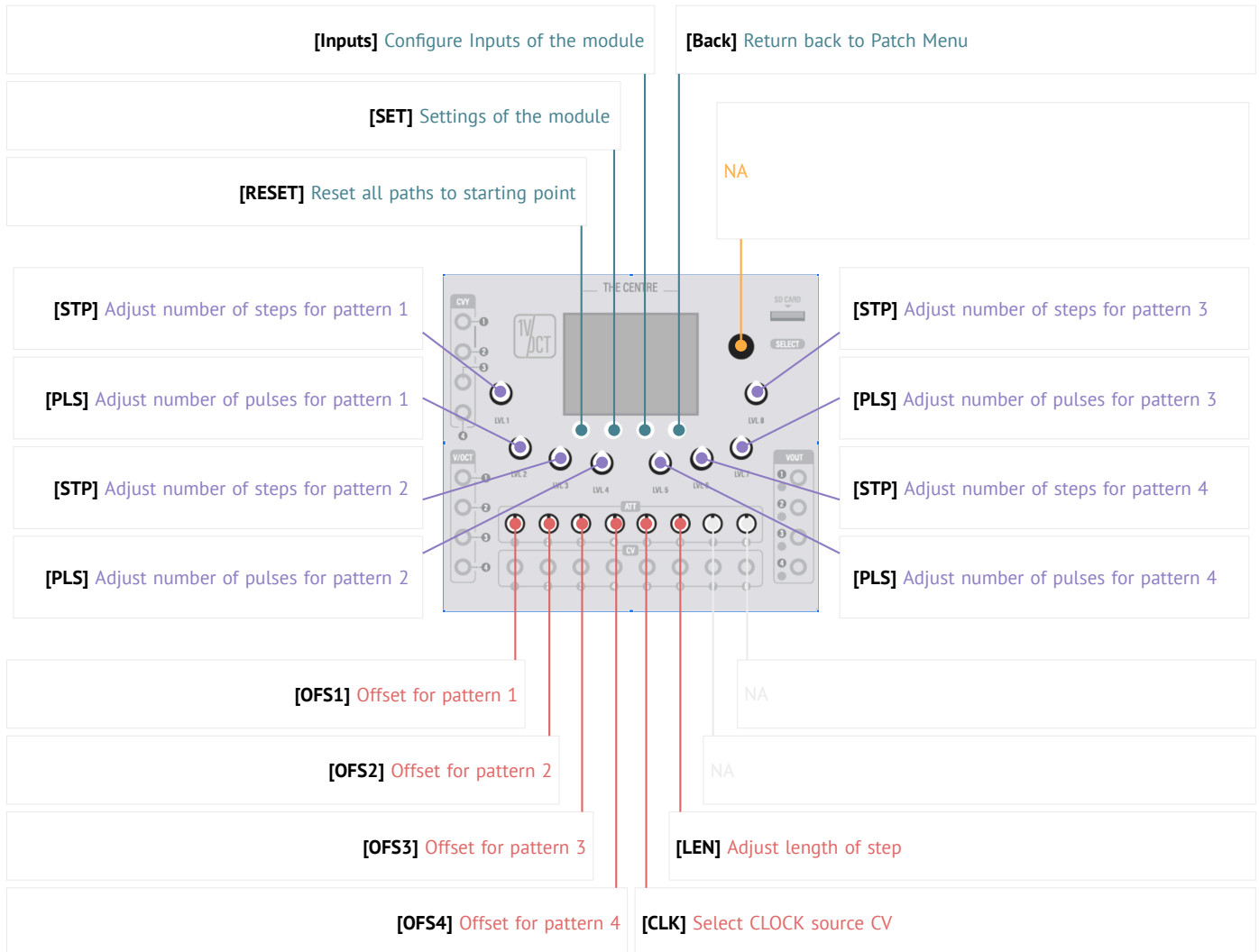
CLK - Clock Generator



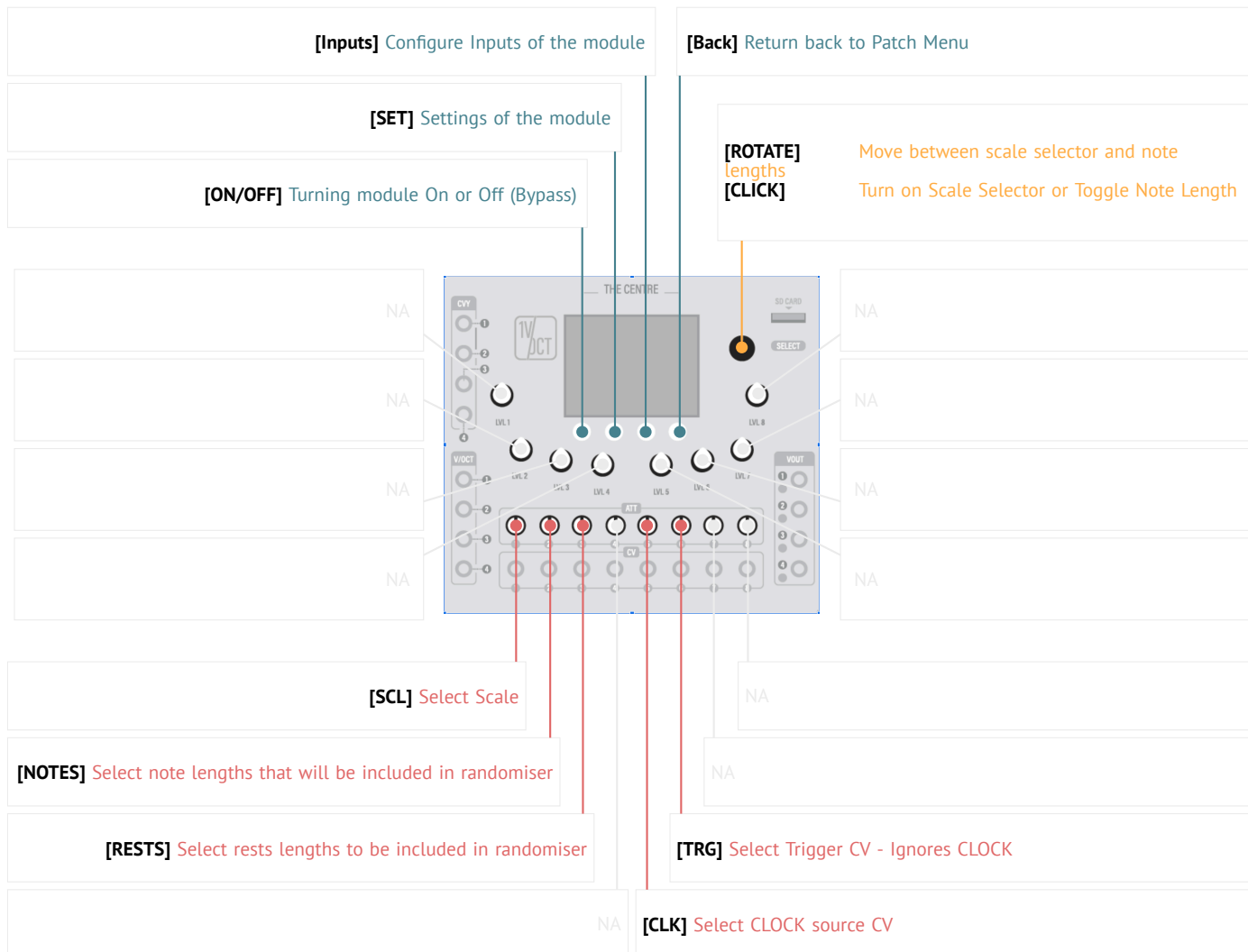
GAT - Clock and Gate Divider



EUC - Euclidean Rhythm Generator



RNG - Random Note Generator



QNT - Quantiser

