VOLTAGE BLOCK MANUAL V1.5

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SPECIFICATIONS

FORMAT:
EURORACK

DIMENSIONS:
20HP, 20mm deep

INTERNAL AND EXTERNAL SIGNALS (3.5mm jacks):
0-5V Logic I/O

MAX CURRENT:
+12V: 120mA
-12V: 15mA
+5V: n/a

INSTALLATION

Remove module from packaging.

Power down your modular synthesizer and disconnect the power cable from the wall outlet.

Attach the included power cable to the module's power connector and connect the other end to the power distribution bus in your EuroRack synthesizer case. Match the red stripe of the cable to the solid white line on your Voltage Block.

Position the module on the mounting rails in your EuroRack case and screw down mounting screws. Power up! If your case does not turn on properly then you have installed the module incorrectly. Simply power down and make sure to follow the diagram when reconnecting the module.

RED STRIPE TO SOLID WHITE LINE
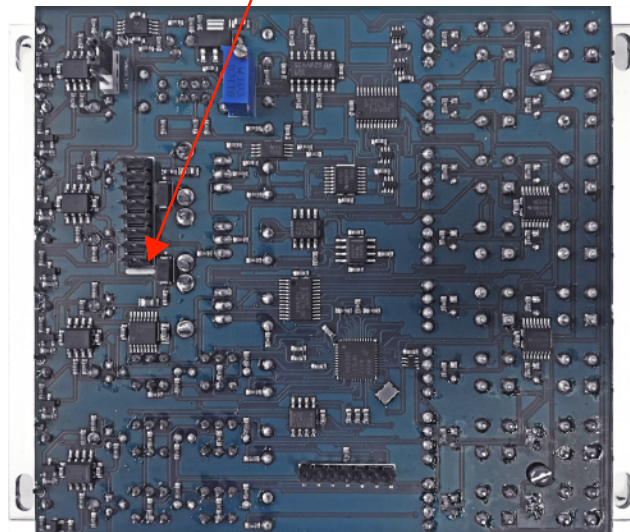
DESCRIPTION

8 independent 16-stage CV sequencers packed with performance features and presets makes the Voltage Block the ultimate CV tool. Create quantized or unquantized sequences for each output, record your modulation changes, tie sequences together, mute on the fly, randomize your outputs and so much more. The Voltage Block can be used stand-alone or pairs well with Varigate 4 and especially Varigate 8+ to share clocking and preset save/recall. All in 20hp.

FEATURES INCLUDE:

8 channels + 16 stage per channel of CV modulation
Save and recall presets
Live slider/automation recording
Scale selection per output or unquantized 0-5V
Interpolation option for each step for smooth or stepped modulation
Offset and attenuation for CV input
Clock and CV operation modes
Sequence length can be set from 1 to 16 steps
Clock can be divided by up to 16
Randomize all outputs per step
Easy control over stage length
Rest/Hold gate input
Glide per stage
Forward, Reverse, Pendulum or Random directions per channel
Mutes per channel
Mutes per sequence stage
Tie presets together for "Song Mode"
Can be linked to the Varigate 8+ to share clocking and preset save/recall (up to 100 presets)
Clock in
Busboard CV gate

OVERVIEW 1

OUTPUTS 1-8: 0-5VCV output channels with LED indicators.

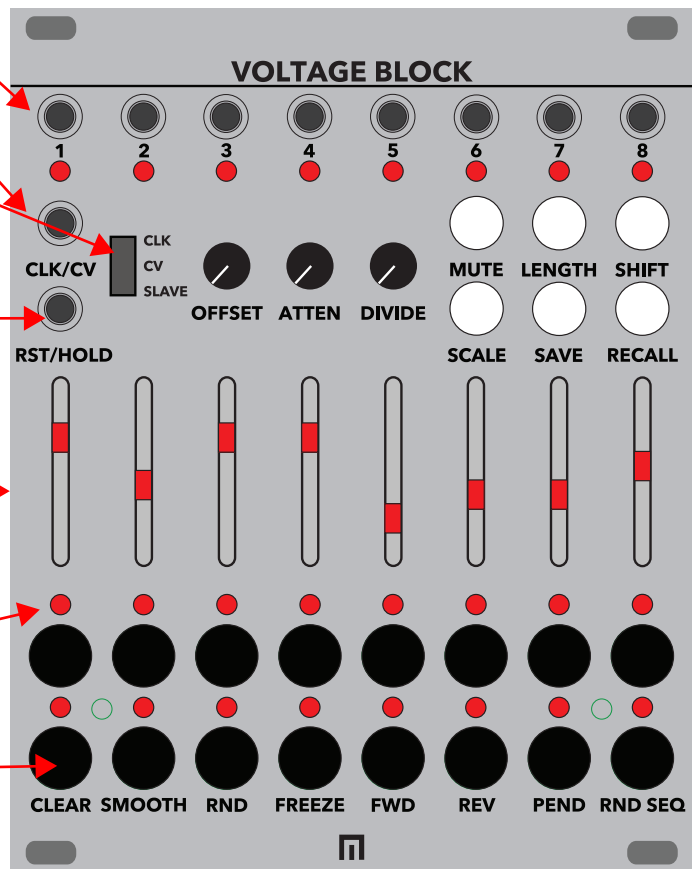**CLOCK IN**: External CLOCK INPUT.

CLOCK/CV/SLAVE: Switch between different interpolation modes. CLOCK, CV or SLAVE (SLAVE for Varigate 8+ connected to the same bus).

RESET/HOLD: Gate input for RESET while in CLOCK mode and HOLD if Voltage Block is set to CV interpolation mode.

SLIDERS: Control CV pitch amount per channel and live recording/automation. Also used to change the SCALE of a given channel.

STEP LED Indicators and other functions.

STEP BUTTONS: Select to access various parameters for each step or the 8 available sequencer outputs including SHIFT + CLEAR, SMOOTH, RANDOM, FREEZE, FORWARD, REVERSE, PENDULUM AND RANDOM SEQUENCE.

VOLTAGE BLOCK

1 2 3 4 5 6 7 8

CLK/CV

CLK
CV
SLAVE

RST/HOLD

OFFSET ATTEN DIVIDE

MUTE LENGTH SHIFT

SCALE SAVE RECALL

CLEAR SMOOTH RND FREEZE FWD REV PEND RND SEQ

OVERVIEW 2

OFFSET: When in CV interpolation mode, OFFSET up to 16 steps.

ATTENUATE: When in CV interpolation mode, adjust the incoming CV signal by adjusting the ATTENUATE control knob.

DIVIDE: Divide your sequences down to 16.
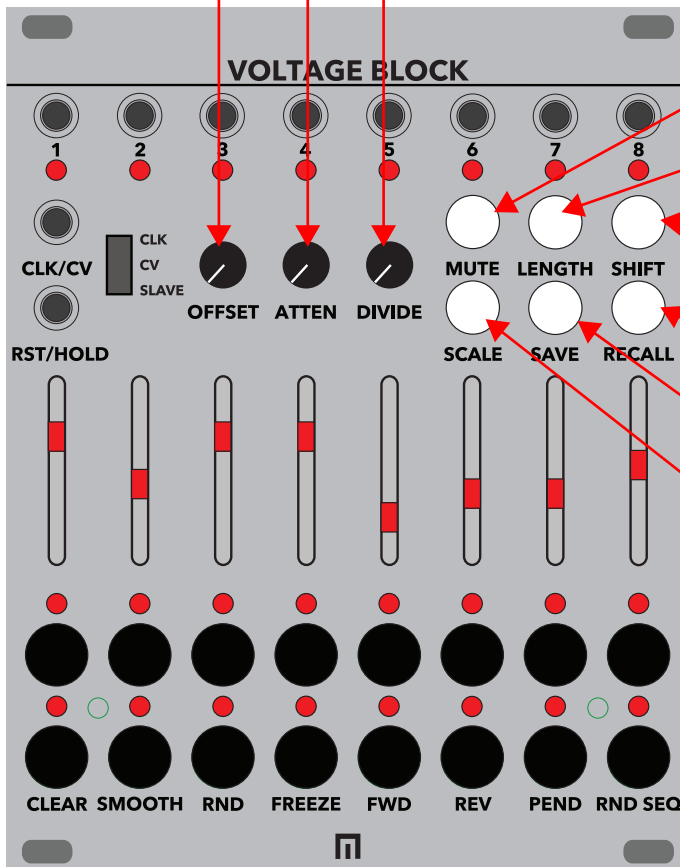
MUTE: Mute per channel OR mute per step.

LENGTH: Select and then adjust a step slider to control the amount of steps per sequence.

SHIFT: Extra feature access (for CLEAR, SMOOTH, RANDOM, FREEZE, FORWARD, REVERSE, PENDULUM AND RANDOM SEQUENCE)

RECALL: Hold and select a STEP button to recall a saved preset.

SAVE: Hold and select a STEP button to save a preset.

SCALE: Select and adjust sliders to change a given sequence scale.

CREATING YOUR FIRST SEQUENCES

Set to "CLOCK" or "SLAVE" (busboard slave) or "CV" depending on your setup. The Voltage Block always requires an input or to slave in order to play.

Patch the outputs to your other module 1v/oct inputs for creating melodies.

Adjust sliders for corresponding channels - as you move the the slider, the changes in voltage/pitch of each step will be recorded.

NOTE: By default, there are 16 steps per each GATE pattern/sequence.

If you're in CLOCK or SLAVE mode and want to adjust the voltage of particular step, *hold* the corresponding STEP button while adjusting a slider.
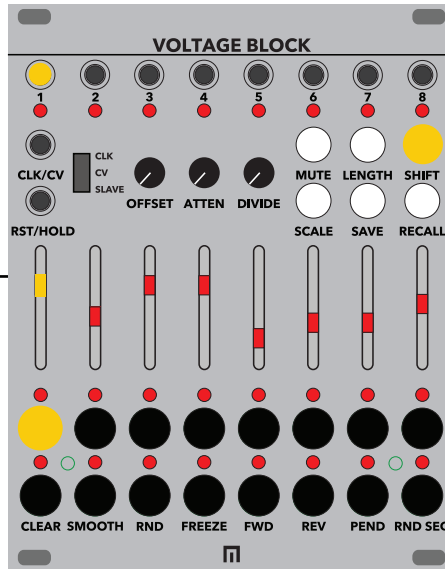
Now you can change the SCALE of that sequence by selecting the SCALE button so that it's lit and then moving the slider for that channel. You will see the LED's light up for each corresponding scale. See Pg.11 for all of the available scales. IF THE SLIDER IS SET ALL THE WAY DOWN, THE VOLTAGES/PITCH WILL BE UNQUANTIZED.
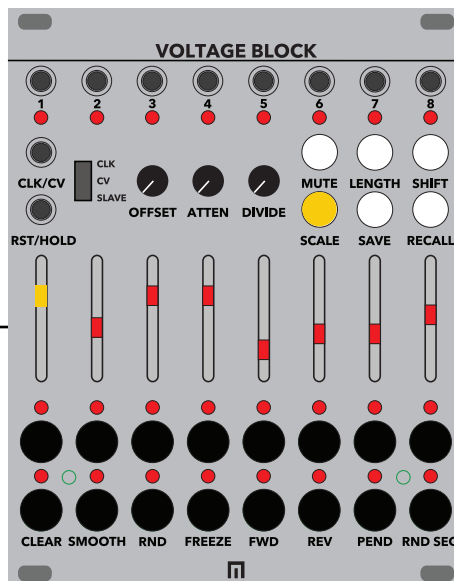
Follow these instructions for GATE channels 2-8.

To clear an existing sequence, simply select SHIFT, select the channel you wish to clear and then CLEAR (step #9).

# SEQUENCE DIRECTION, SMOOTH AND RANDOMIZING

SEQUENCE DIRECTION can be changed by selecting SHIFT, the channel which you'd like to change and then one of the corresponding step buttons. Forward is on by default but REVERSE, PENDULUM AND RANDOM SEQUENCE are available.
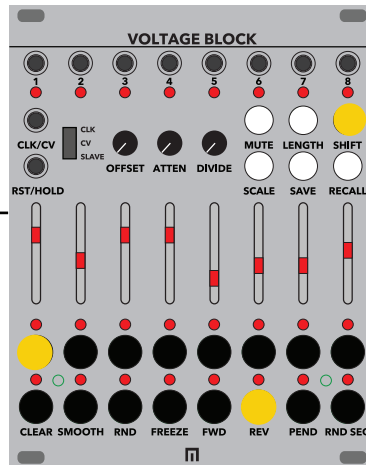
To add SMOOTHING (glide) to a step, select the SHIFT button, then select SMOOTH and then a step button. To remove smooth from a step simply select that step button again (LED no longer lit).
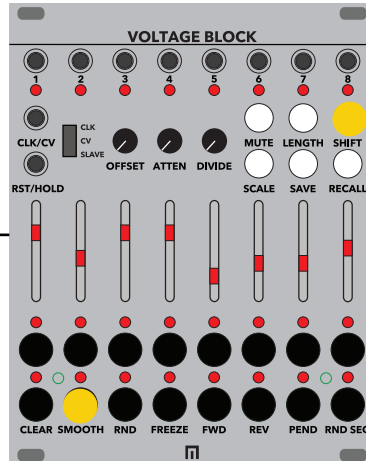
To RANDOMIZE the voltages per step, select SHIFT, then the channel you want to randomize and then the RND button. You can keep selecting RND to continue randomizing until you find something you like. If you want to change the randomization at all simply exit out of this mode (select SHIFT again) and you can manually change the pitch by holding a step button and adjusting the corresponding slider.
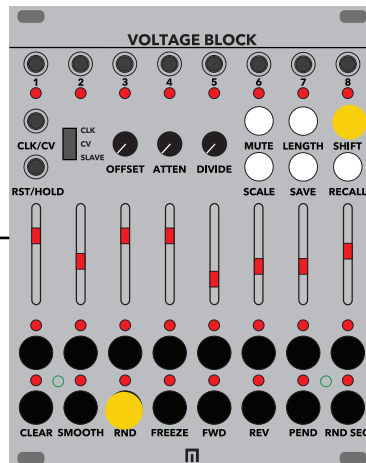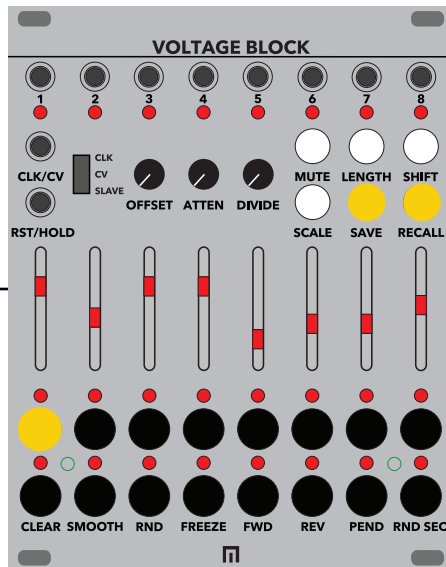
SAVING AND RECALLING PRESETS

The STEP buttons also act as PRESET slots. You can save 16 presets if you are using Voltage Block stand-alone or up to 100 presets if you're using Voltage Block *slaved* to Malekko Varigate 8+.

TO SAVE in stand-alone mode: **Hold** the SAVE button while you select one of the STEP buttons to save to that location.

TO RECALL in stand-alone mode: **Hold** the RECALL button while you select one of the STEP buttons to save to recall that preset.

VOLTAGE BLOCK

1 2 3 4 5 6 7 8

CLK/CV
CLK
CV
SLAVE
OFFSET ATTEN DIVIDE

MUTE LENGTH SHIFT

RST/HOLD

SCALE SAVE RECALL

CLEAR SMOOTH RND FREEZE FWD REV PEND RND SEQ.

To save while slaved to Varigate 8+ simply select the Varigate 8 preset button you wish to save to. Follow the same procedure to recall a saved preset.

Varigate 8+ in SONG MODE will also recall each corresponding saved preset on the Voltage Block.

To find out more about save, recall and song modes on the Varigate 8+, visit: https://malekkoheavyindustry.com and download that manual.

SEQUENCE LENGTH, RESET/HOLD, DIVIDE, ATTENUATION AND OFFSET IN CV MODE

You can adjust the LENGTH of a sequence (amount of steps per sequence) by selecting LENGTH and then the button corresponding to the last step in the sequence.
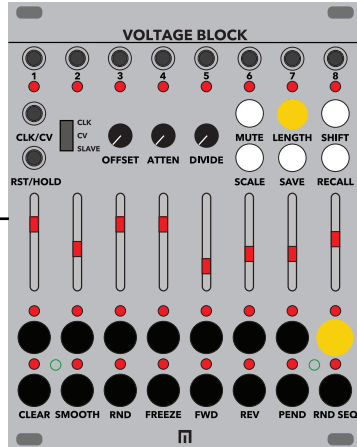
For instance, if you only want an 8 step sequence, simply select the 8th STEP button.
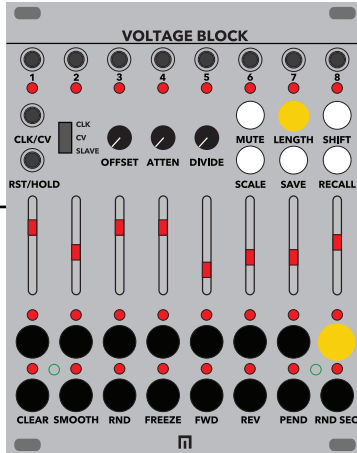
RESET/HOLD:

In CLOCK and SLAVE mode, a gate inserted into RST/HOLD will cause the Voltage Block to reset to step 1 (when the gate is high).

If the interpolation mode is set to CV instead of CLOCK or SLAVE, RST/HOLD will hold the current step while the gate is high.

DIVIDE the length of your sequence by 16 while in CLOCK or SLAVE mode.

ATTENUATE will attenuate the incoming CV, in turn the amount the Voltage Block sequences will respond to this signal.
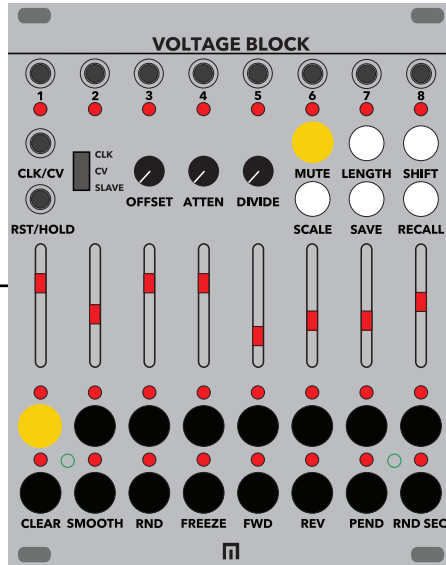
OFFSET will change the starting step of a sequence when in CV interpolation mode.
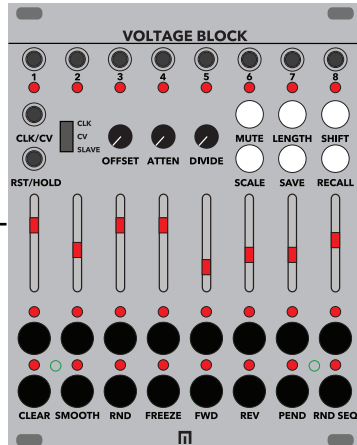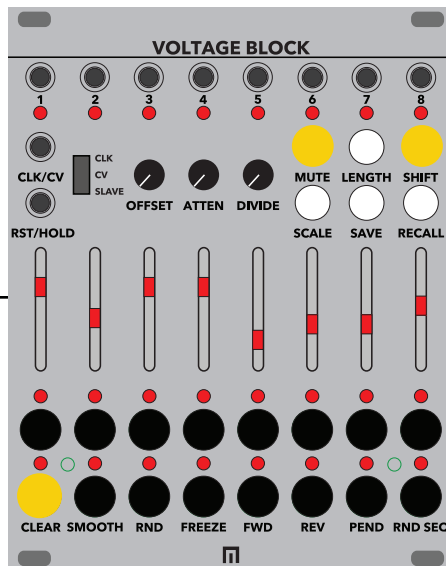
MUTE PER CHANNEL AND MUTE PER STEP

To MUTE and entire channel, select MUTE and then the corresponding channel button.

To MUTE individual steps of a channel, select MUTE and then one of the step buttons on the bottom row (9-16) to enter this mode. The LEDs will turn off for those steps you mute.

FREEZE, ARP AND AVAILABLE SCALES

To Freeze the last voltages played on individual channel outputs, select the SHIFT button and then _hold_ the FREEZE button while you select an output. LEDs will turn on for those frozen channels. When paired with Varigate 8+, V8+ FREEZE messages will also freeze the Voltage Block corresponding voltages/channels.
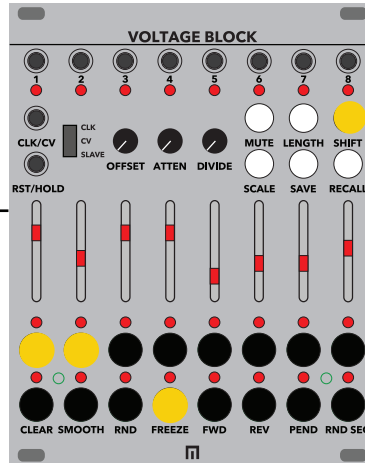
Arpeggiator Mode:

In CLOCK or SLAVE mode, whenever more than 2 buttons are pressed they will be clocked through in the order they are pressed. When no clock is present, pressing a button will manually select the last step pressed.
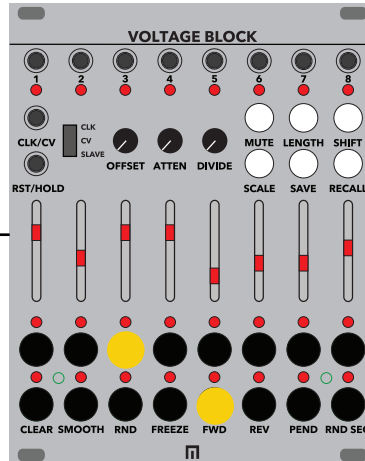
The following scales are available starting on STEP button 1:

1: Unquantized
2. Japanese
3. Major Pentatonic
4. Minor Pentatonic
5. Blues
6. Locrian
7. Arabian
8. Phrygian
9. Minor
10. Dorian
11. Mixolydian
12. Persian
13. Double Harmonic
14. Major
15. Lydian
16. Chromatic
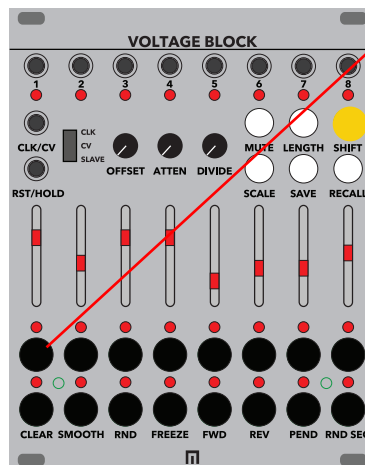
WORKING IN CONJUNCTION WITH VARIGATE 8+

The Voltage Block was designed to work exceptionally well along with the Malekko Varigate 8+. The following features are prevalent when the Voltage Block is connected to the same bus as the Varigate 8+ and in "SLAVE" mode (where the master clock is now the Varigate 8+).

Saving presets: While working on a given sequence on the Voltage Block, simply save the Varigate 8 preset and your Voltage Block channel/preset will also save to that location. Voltage Block divisions and lengths are also saved in this fashion.

Recalling presets: same as above

Banks: Varigate 8+ includes 10 banks, each containing 10 presets therefor you can save up to 100 Voltage Block presets as well.

Song Mode: Saved Voltage Block presets are tied together along with Song Mode on Varigate 8+

Freeze and Random inputs: When these modes are active on the Varigate 8+, Varigate 8 will in turn send corresponding messages to the Voltage Block. For instance if you have gates patched into the Random and Freeze inputs on Varigate 8+, those Random and Freeze messages will carry over to Voltage Block.

A reset message is also sent from the Varigate 8+ to Voltage Block to lock timing.
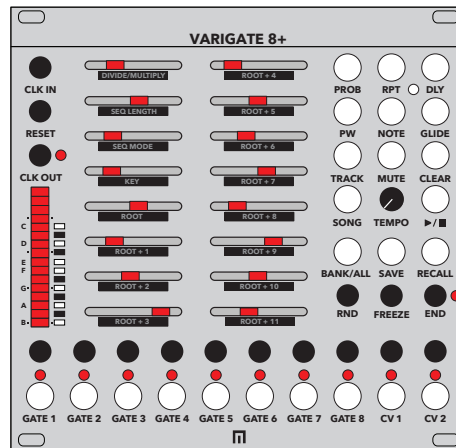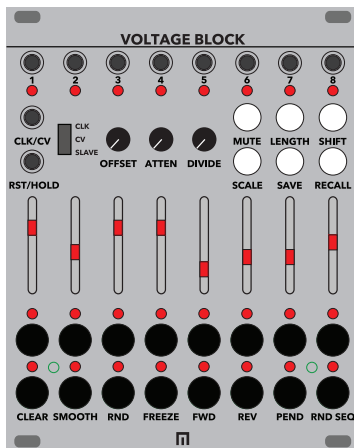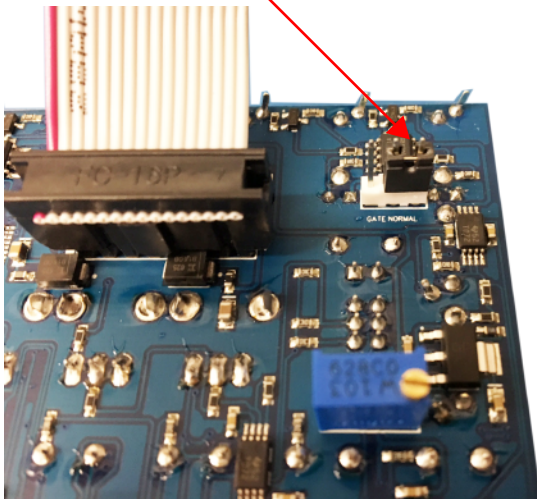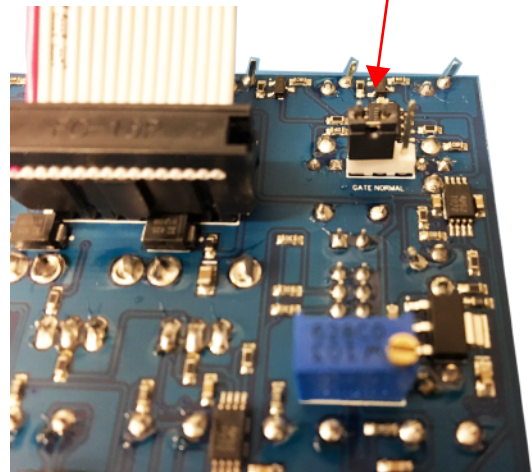
ADDITIONAL BUSBOARD CLOCKING

By default, the VOLTAGE BLOCK is set to receive clock from the busboard (clocks to Varigate 8+ and other products that output clock to the busboard like the 4MS QCD and 4MS DLD for instance).

Default jumper setting (will receive busboard clock)

Pull off the jumper and move it over to the left to turn off incoming busboard clock.

WARRANTY

This product is covered by the Malekko Heavy Industry warranty, for one year following the date of purchase. This warranty covers any defect in the manufacturing of this product. This warranty does not cover any damage or malfunction caused by incorrect use – such as, but not limited to, power cables connected backwards, excessive voltage levels, or exposure to extreme temperature or moisture levels. The warranty covers replacement or repair, as decided by Malekko Heavy Industry. Please visit our website **https://malekkoheavyindustry.com** to obtain full warranty information and to register your product for coverage.