

Vector Sequencer



User Guide



Getting Started

The Vector Sequencer is a digital sequencer in the Eurorack modular format. It provides a flexible sequencing engine with support for 8 independent parts. There are two sub-sequencers per part for internal modulation, chance operations, and presets with a playlist function. The Vector has both MIDI and CV connections for interfacing with a wide variety of electronic musical instruments.

An optional Jack Expander module adds support for 4 more analog voices (Pitch, Gate, Velocity), 8 more trigger outputs (6 can also be used for input), MIDI in and out on DIN jacks, and dedicated jacks for DIN Sync (in and out).

Installation

Take the Vector out of its protective anti-static bag and have a look at the back. The power connector is on the lower-right of the circuit board and is labelled 'Power'. Connect a 16-pin Eurorack power cable if you have not already, red stripe DOWN per usual.

If you have the Jack Expander module, you should connect it to your Vector before adding them to your case. Lay both the Vector and the Expander face down in front of your case, with the Expander just to the left or the right of the Vector. Identify the two 20-pin connectors on the Vector labelled 'J20' and 'J13'. On the Expander, the matching connectors are 'J200' and 'J130'. Using the two ribbon cables that come with the Expander, connect J20 to J200 and J13 to J130. Make sure to keep the orientation of the red strip **UP** for these connections.

Now add the Vector (or Vector/Expander combo) to your Eurorack-format case. Don't forget to power down first! The Vector consumes 140mA on +12V, 20mA on -12V. The Expander adds 30mA on both +12 and -12. Anything plugged into the USB A 'to device' jack may draw

additional current on +12V. Most controllers (including Launchpads) pull less than 100 mA, but a cellphone or tablet may pull up to an additional 210 mA.

Firmware Updates & Support

It is a good idea to check regularly for firmware updates at <http://vector.five12.com>. For questions & support, and to be added to a mailing list for announcements (firmware, videos, etc), email info@five12.com.

Limited Warranty

Five12 warrants the Vector Sequencer to be free of defects in assembly or materials for one year from the date of purchase by the owner. This warranty does not cover damage due to misuse such as: Incorrect power supply voltages, extreme heat or moisture, modified firmware or physical damage. Determination of misuse is at Five12's discretion. During the warranty period, defective products will be repaired or replaced as determined by Five12.

To return the Vector for repair, contact info@five12.com for further instructions. The owner is responsible for shipping fees to Five12. Return shipping will be paid for by Five12.

Acknowledgements

A very special thank you goes to Joe Grisso, without whom this could not have happened. Many thanks also to Charles Buckingham, Jason Fink, Michael Koehler, Henry Jackson, Chris Meyer, Eric Williamson, Jeff Wojciechowski, David Small, Michael Stearns, Ron Sunsinger, and Andy Yih.

Front Panel Tour

USB A 'To Device'

Plug in a MIDI Keyboard for programming sequences, or send MIDI to a synth. Devices only, no hubs!

USB B 'To Host'

Hook up to a computer or iOS device for MIDI I/O. Hold down Shift on startup to run in Disk Mode.

The 9th Encoder

Edits values for all steps in most edit modes. Select steps to edit just those steps as a group.

Globals

Tempo & sync settings, default key & scale, part names and types, output assignments.

Parts

View part activity, switch between parts, mute & solo parts. The current part name is shown top-left of the 2nd OLED.

Shift : Sequence Ops

Use Shift + other buttons to trigger operations global to a sequence. Shift+Pitch to reset all pitch values to their defaults, ditto for gate, velocity, etc. Use Shift + [skip|mute|select] to *un*-[skip|mute|select] all steps.

Run, Clock, Reset

Sync In or Out, Triggers In or Out, Set operating mode in Global.

Mod CV In

0-5V, set mapping in Modulation.

CV and MIDI Outputs

Flexible output assignments, setup in Globals.

Sequence Editing

Main edit pages for sequences: Rec, Pitch, Gate, Velocity, etc.

Presets & Scenes

Per-part presets, and a preset playlist w/ looping. Use Scene mode for ad-hoc arrangements.

Two HiRez OLEDs

Status readouts across the top, values for the current edit page along the bottom.

8 Encoders

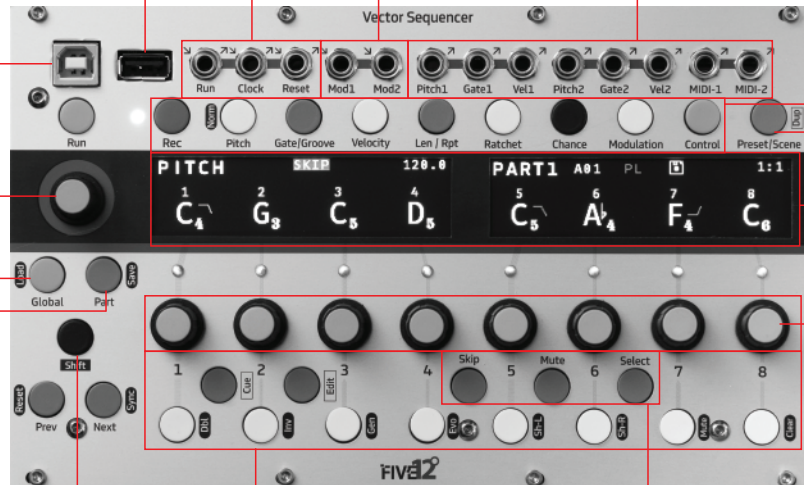
Twist to edit values displayed onscreen. Shift & Twist for quantized value jumps.

One-Octave Keyboard

Use for step-recording & transposing in Rec mode. Use white keys for skip, mute & select in other modes.

Skip, Mute, Select

In most sequence editing modes, sets the behavior of the white keys in they keyboard. This sub-mode is displayed top-center of the 1st OLED.



Sequence Editing



For your first sequence, connect the **Pitch1** and **Gate1** outputs of the Vector to other modules in your system, such as an oscillator for pitch and an envelope generator for gate. If you want to connect via MIDI, use one of the included 3.5mm to DIN MIDI adapters to connect **MIDI-1** on the Vector to a MIDI synthesizer.

Now press **Gate** on the Vector and twist a few encoders to turn on the gates for those steps. By default, all of the gates for all parts are off, so we need to turn at least one on to hear something. Press **Run** to start the sequence. Now you are ready to start exploring the other edit pages.

The most common parameters for sequence editing are accessed via the **Pitch**, **Gate**, **Velocity**, **Len/Rpt** and **Ratchet** buttons. Repeatedly pressing those buttons will cycle into secondary pages such as **Glide** and **Groove**. The current edit mode is shown top-left of the 1st OLED, and each page has a distinctive graphic value readout that makes it easy to keep track of where you are. Use **Next** & **Prev** to edit steps other than the first 8.



Pitch: Sets the pitch value for each step in semitones from C1 to C9.

Glide: For monophonic parts, sets the glide time for pitch from 0% to 100%. Use longer gate times for smooth glides.

Chord: For chord-based parts, sets the output chord, from unison

through all dyads to an octave, then triads and seventh chords. To set a part to chord mode, see **Parts** on page 11.



Gate: Sets the gate time for each step, from muted, to very short, up to a tied (legato) note. When the gate is off, no MIDI notes are generated.

Groove: Adjusts the time of the step forward or backward just a touch.



Velocity: Sets the velocity CV output level and MIDI note velocity. The minimum value is 1. To mute a note, use a zero gate or mute the step.

CC1, CC2, CC3: Sets the output value for three lanes of MIDI CC outputs. If a CC number is set for a lane (see **Sequence Controls** on the next page), a CC message is generated for every step that is not muted.

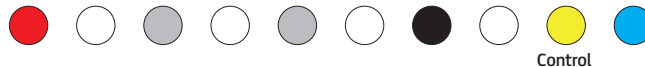


Step Len: Sets the length of a step in multiples of the base step time.

Repeat: Sets the step to repeat up to 8 times.

Ratchet: Sub-divides the step up to 4 times.

Sequence Controls



The **Sequence Control** pages contain overall settings for the sequence, such as sequence length and rate. There are three sub-pages here, press **Control** to cycle between them.

| SEQ CTL | | | | 122.0 |
|---------|-----|-----|-------|-------|
| START | LEN | DIR | RESET | |
| 1 | 16 | FWD | AUTO | |

START, LEN: Sets the starting step and pattern length within the maximum sequence length for that part.

DIR: Direction: Forwards, backwards, alternate with or without repeating the ends, or run randomly.

RESET: Sets the sequence to reset automatically, every *n* beats, or externally (**EXT**). For external reset, use sync mode 'Cr/1', or set a trigger input on the Expander module to 'EXT' mode in prefs and pick the matching Tx value for reset. See also: **External Sync** on page 14.

| PART1 | A01 | PL | 1:1 |
|-------|------|-----|------|
| RATE | MODE | OCT | TRNS |
| /16 | MDV | 0 | 4 |

RATE, MODE: Set a sequence rate using common musical divisions (**MDV**), percent of a beat (**PCT**), speed mode (**SPD**), where higher is faster, or any fraction from 1/1 to 16/16. If you have an Expander, you can set the mode to T1-T6 to step manually via an external trigger. Be sure to set the matching trigger to **EXT** mode in **Globals**.

OCT & TRANS: Add an octave or semitone transposition to all notes.

Sequence Controls: Page 2

| SEQ CTL | | 122.0 | PART1 | | A01 | PL | 1:1 |
|---------|---------|-------|-------|------|-----|----|-----|
| VEL VAR | TIM VAR | KEY | SCALE | GEN | EVO | | |
| 0 | 0 | (C) | (CHR) | ACD1 | LOW | | |

VEL VAR, TIM VAR: Add random variations to velocity and timing (groove).

KEY, SCALE: Override the global settings for key and scale.

TIP: The master tempo for the Vector, and the default key and scale settings for all parts are in **Globals**.

GEN: Sets the algorithm for pattern generation. See **Generate & Evolve** on page 8 for details.

EVO: Set the amount of change the evolve operation has: Low, Medium or High.

Sequence Controls: Page 3

| SEQ CTL | | 122.0 | PART1 | | A01 | PL | 1:1 |
|---------|------|-------|-------|--|-----|----|-----|
| CC 1 | CC 2 | CC 3 | PQNT | | | | |
| 0 | 7 | 11 | BAR | | | | |

CC 1-3: Sets the CC numbers for the three CC lanes in the Velocity pages.

PQNT: Preset Quantization, sets whether presets change immediately, on the next beat, or on the next bar.

Globals, Tempo, Routing

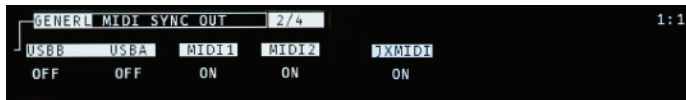


Global

The Globals pages have a wide range of configuration settings for the Vector. There are three main sections: **GENERAL**, **PARTS**, and **ROUTING**. Use **Prev/Next** to move between them. Use encoder 9 to dial through the sub-pages of each section.



TEMPO, SYNC, KEY: Set the global tempo, sync mode, key and scale. This is also where you turn the Preset Playlist on and off. For more on sync, see **External Sync** on page 14.



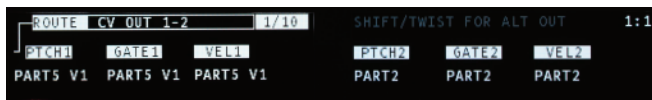
MIDI SYNC OUT: MIDI Clock on/off for all MIDI outputs.

FILE SETTINGS: Preferences for Autoload and Autosave.

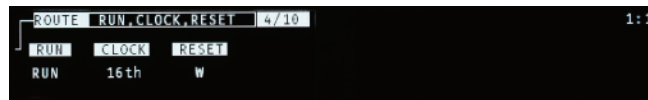
USB STATUS: Connection status for both USB ports. To connect an iOS device, use Apple's Camera Adapter and the USB B 'to host' connector.

PARTS: See **Parts** on page 11 for more on these settings.

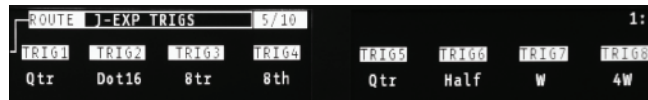
ROUTING: For each of the outputs on the Vector Sequencer you can set which part it is assigned to.



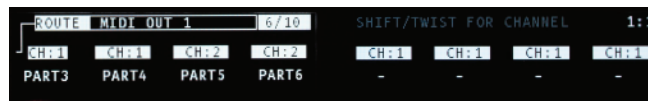
CV OUT: These are sets of Pitch, Gate & Velocity outputs – two onboard the Vector, four more on the Expander. Use the encoders to set the part assignment for each output. For Chord parts, hold **Shift** and twist the encoder to set the voice. For Velocity outs, **Shift & twist** to assign it to one of the sub-sequencers of a part.



RUN, CLOCK, RESET: When not used for sync input, these jacks can generate clock CVs across a wide range of divisions. The **Reset** jack can also be set to **EXT** for external reset. Use **ST.x**, **GT.x** and **RS.x** modes to output step triggers, gates or sequence resets directly from a part.

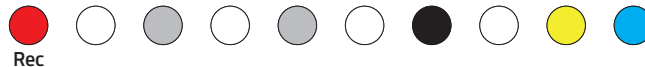


J-EXP TRIGS: For the optional Jack Expander module, these are set to output clock divisions by default. The first 6 triggers can also be configured as **EXT inputs** for externally resetting or stepping a sequencer. When using **RC24**, **CR/1** or **Cr/1** sync modes, triggers 5 & 6 on the Expander can only be used as outputs.



MIDI, USB: Each MIDI Output (USB A, USB B, MIDI-1, MIDI-2 and Expander MIDI Ports) has 8 'slots' to output up to all 8 parts. **Shift & twist** an encoder to set the MIDI channel for that slot.

Recording

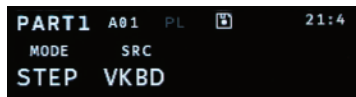


On the **Rec** page, you can enter or modify sequences using the built-in one-octave keyboard, any USB MIDI Class-compliant host or device, or, if you have the Jack Expander module attached, a MIDI keyboard connected via a traditional 5-pin MIDI cable. When a recording mode is active, the LED next to the **Rec** button glows red (for step record) or purple (for other modes).



Pitch values for the sequence are displayed in a compressed format on the left display, with parameters for adjusting the recording mode and source on the right. Only currently active notes for the sequence are displayed. So if your sequence starts on step 1 and runs for 8 steps, only eight note values will be shown. Skipped or muted notes are displayed in gray.

The right OLED display shows parameters for recording mode and source.



The recording modes are:

OFF: No recording activity.

STEP: MIDI notes are used to program the pitch values for each step of the sequence one by one. Use encoder 9 to move the 'cursor'.

TRANS: Incoming MIDI notes are used to transpose the sequence. MIDI Note number 60 is used as the center point.

THRU: Incoming MIDI notes are sent directly to the outputs for the current part, both CV and MIDI. In this mode, you can use the Vector as a MIDI to CV converter while recording is active.

The **Src** param sets which source of MIDI notes the record modes listen to.

VKBD: The one octave keyboard on the Vector.

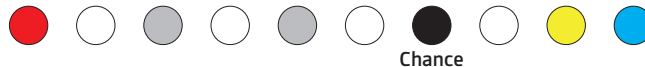
USBA: The USB A 'to device' connection.

USBB: The USB B 'to host' connection.

JEXP: The **DIN MIDI** jack on the Expander.

When using the onboard keyboard, the **Next** and **Prev** buttons shift the keyboard up and down by octaves. The current octave is always shown in the top-middle of the first OLED display.

Chance Ops



Chance operations allow you to add variability to a pattern, such as randomly skipping or muting a step, jumping to another step, or changing the pitch. For each step in a sequence, you can pick an operation and the probability that it will happen. You can also set the operation to happen only on even bars, odd bars, or every 3rd or 4th bar.

Chance operations are represented by icons. Their probability of occurring ranges from 0% to 100% and is represented by a circle around the operation icon. The bar setting is represented by a letter or number below and to the right of the operation icon.

There are three pages for chance ops, use the **Chance** button to cycle between them.

CHANCE PROB: Set the probability that op will happen.

CHANCE OP: Pick an operation (the default is mute).

CHANCE BAR: Limit the operation to specific bars.

Examples:



Mute, 30% of the time.



Jump backwards, 50% of the time, only every 4 bars.



Mute a Step, Un-Mute a Step



Skip a Step, Un-Skip a Step



Jump: Backwards, Anywhere, Forwards



Velocity: Less, More, Max



Gate: Shorter, Longer, Tie



Ratchet: 2, 3, 4



Pitch Up: Random, Random Shift Up, Shift Up by Semitone



Pitch Down: Random Shift Down, Shift Down by Semitone



Jump: To a Specific Step

Sequence Ops, Generate & Evolve



Sequence Operations

A variety of sequence transformations can be triggered by holding down the **Shift** key and pushing any of the white keys on the mini keyboard. The names for these operations are printed vertically just to the right of each button.

Db1: Doubles the current pattern.

Inv: Invert all pitches, using the base pitch as the center point.

Gen: Generates a new sequence.

Evo: Modifies (evolves) the current sequence. Set the amount of variation on the 2nd **Control** page.

Sh-L: Shifts the sequence one step to the left.

Sh-R: Shifts the sequence one step to the right.

Mute: Mutes the current part. This is the same as muting a part on the **Part** page.

Clear: Restores all parameters of a sequence to their original value, and marks the current preset as 'empty'.

TIP: Hold **Shift** and press any the edit mode buttons to 'normalize' that parameter, which will reset it to its original value.

Generator Algorithms

To set the algorithm used for sequence generation look at the 2nd **Control** page.

ACD1: Acid 1: Generates a 16 step sequence at 1/16th notes with a variety of pitch tones, including minor seconds and tritones. Gates and Velocity steps are set to %50, and then a few accents (Velocity @ 100%) are added.

ACD2: Acid 2: similar to **ACD1**, but adds in a few pitch glides.

BRL1: Berlin School 1: Generates an 8 step sequence at 1/8th notes, emphasis on octaves and fifths.

357: Generates a 'cell' based pattern that is 3, 5 or 7 steps long, repeated out to 16 steps.

OBL1: Obliq 1: Generates a cell based pattern that anywhere from 2 to 7 steps long, repeated out to 16 steps and evolved. Affects Pitch, Gate, Velocity & Step Length.

OBL2: Obliq 2: Generates more radical sequences than **OBL1**.

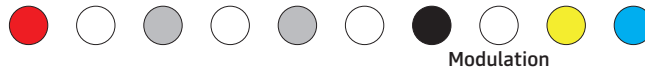
RND1: Randomize Pitch & Gate.

RND2: Randomize Pitch, Gate, Velocity.

RND3: Randomize Pitch, Gate, Velocity, Step Length, & Ratchet.

TIP: Most of the pattern generators only affect a few parameters, often just Pitch, Gate and Velocity, so you can push generated sequences in very different directions by pre-adjusting other parameters, such as **Glide** and **Rate**. For continuous variation, use lots of **Chance Ops** such as **Mute**, **Skip** and **Jump**. To widen the pitch range, set a **Sub Sequencer** to modulate semitones or octaves.

Sub Sequencers



In addition to the main sequence, each part on the Vector Sequencer has two simpler CV-only sub-sequencers for internal modulation. These sequencers are limited to a maximum length of 8 steps and a range of speeds based on standard musical divisions. They can be used to modify the transposition, rate, length and other parameters of the main sequence. You can also assign any of the **Velocity** outputs on the Vector to one of the modulation sequencers for direct output of the sub sequencer's CV values.

There are five pages in the **Mod** section, two for each sub-sequencer and one for setting up external modulation. The first page for a sub-sequencer has settings for length, direction, rate and target parameter, the second has settings for the value of each step.

To setup modulation of a parameter:

| SUB-SEQ-1 | | | 122.0 | PART1 | A01 | PL | 1:1 |
|-----------|-----|------|-------|-------|-----|----|-----|
| LEN | DIR | RATE | PARAM | MIN | MAX | | |
| 8 | FWD | WHL | TRNS | -24 | 24 | | |

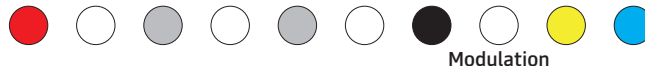
1. Set the length and rate of the sub-sequence.
2. Pick the parameter you want to modulate. The **Min & Max** values will automatically update to match the range of the target parameter. Also, the initial values of the sub-sequence will be set to the current value of that parameter.

3. Press **Next** to page over to the steps for the sub-sequence and adjust as desired.

| SUB-SEQ-1 | | | | 122.0 | PART1 | A01 | PL | 1:1 |
|-----------|---|---|---|-------|-------|-----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| 0 | 0 | 3 | 4 | 6 | 8 | 0 | 0 | |

TIP: To route the values of one of the subsequencers to a CV output, jump over to the **Route** page in **Globals** to assign the sub-sequence to an output.

CV Modulation



The Vector Sequencer has two CV inputs (**Mod1** and **Mod2**) that can be used to control a variety of parameters such as gate time, velocity scaling or the probability for chance operations. The input voltage range is 0 to 5V. Each of the 8 parts of the Vector has two modulation busses that can listen to either or both of the external modulation inputs.

To navigate to the external modulation page, press **Mod**, then use **Next** to navigate over to the fifth modulation page.

| MOD | EXT | 122.0 | PART1 | A01 | PL | 1:1 |
|------|------|-------|-------|------|------|-----|
| SRC | TARG | AMNT | SRC | TARG | AMNT | |
| EXT1 | GATE | 50 | EXT2 | RCHT | 35 | |

To setup external modulation for a part:

1. Pick a mod source (**EXT1**, **EXT2**, or **OFF**).
2. Pick a target parameter.
3. Set the amount of modulation, which ranges from -100% to 100%. For most parameters, 50% is a good starting point. At 100% the amount of modulation will be enough to range from the smallest value for the parameter to the largest.

Modulation Targets:

- GATE:** Gate time.
- STLN:** Step Length.
- STRP:** Step Repeat.
- RCHT:** Number of ratchets.
- PROB:** The probability amount for **Chance Ops**.
- STRT:** Start step.
- LEN:** Sequence length.
- DIR:** Sequence direction.
- RATE:** Sequence rate.

For all targets, modulation is calculated at the start of each step. The current value for the modulated param is read and then adjusted up or down based on the input voltage and modulation amount.

TIP: For best results, it helps to know what the voltage range of your modulation source is. Attenuator modules (or cables) and level shifters (for bipolar voltages) can be handy for getting a CV source into the 0 - 5V range of the Vector's modulation inputs.

TIP: Using a VCA controlled by a pitch or velocity CV from the Vector can be both a handy and interesting way to control the voltage level of a CV.

Parts



PARTS

The Vector sequencer has 8 parts, each of which has a monophonic or chord-based note sequencer and two sub-sequencers for modulation. All of the sequencers for all parts start and stop with the Run button (or external sync), and they all share a common tempo, but are otherwise independent. They can have independent run rates, lengths, directions, etc. Each part also has its own set of presets and playlist settings. For an overview of how all this fits together, look at the diagram on the back cover of this manual.



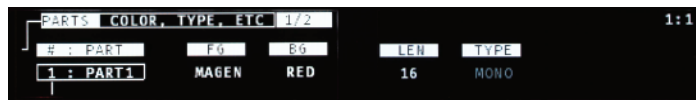
Use the **Part** button to view the names and activity for all 8 parts on the Vector at once. On this page, the white keys of the mini-keyboard can be used to **select** which part you are currently editing. The **Part** page can also run in **mute** or **solo** sub-modes. Use the gray buttons between steps 4-7 to select which of the three modes to use.

TIP: From any sequence edit page, hold down the **Part** button and press one of the white mini-keyboard keys to directly jump to the other part.

PART SETUP

To edit the name, colors, maximum length or type of a part, look in globals: Press **Global** and use **Next/Prev** to find the 2nd page, titled '**PARTS**'. There are two sub-pages here, use the encoder 9 to move

between them.



On the first **PARTS** page in globals, use encoder 1 to select the part you want to modify. Using encoders 3 & 4 you can set the LED colors for the foreground (current step) and background (other steps).

The main sequence for each part has a maximum length of 16, 32 or 64 steps, but longer sequences mean fewer presets. To change the max length, use encoder 5. For parts 5-8, you can also set a part to run in chord mode (encoder 6). When you change the max length or type of a part, you will be prompted to use **Shift+Clear** to initiate the change, and then the **Next** button to confirm. Warning: this process will erase ALL existing presets for that part!

To rename a part, use encoder 9 to move to the second **PARTS** sub-section in **Global**. On this page, use encoder 1 to select the part you want to rename, and encoders 2-6 to edit the name.



PARTS & ROUTING

The routing options for CV and MIDI outputs are very flexible. For details on setting up part assignments for outputs, see **Routing** on page 5.

Projects



PROJECTS

The Vector stores your projects on a micro-SD card located on the back of the module. By default, projects are auto-loaded when the Vector is powered on, and auto-saved each time the transport is stopped. To adjust those settings, see **Globals**. There is an icon for the SD card near the top-center of the 2nd OLED. When a project is changed, the icon will have a dot in its center. For a saved project, the icon will show a solid rectangle.

To manually save a project, hold down the **Shift** button and press **Part**. Use encoders **1-7** to edit the project name, then push **Next** to save. If you change the name of a project to the name of another existing project, you will see an overwrite warning.



Each project gets its own folder on the SD card. The Vector keeps the most recently saved version of a project, along with several backups. Projects that are saved manually end in the extension **.VSM**, autosaves use **.VSA**.

To load a project, hold **Shift** and press **Global**. Use encoder **9** to select the project and **Next** to load it. To make a new project, use **Shift+Global** and pick 'New Project'. A name for the new project will be automatically generated.



DISK MODE

Running the Vector in disk mode allows you to mount the contents of the SD card onto your computer, which makes it very quick and easy to back up copies of your projects and calibration files, and for loading new firmware.

To run the Vector in disk mode, connect it to your computer (Mac, PC, Linux) with a USB A - B 'Printer' cable, and hold down the **Shift** button while powering up. The Vector will start with large 'Disk Mode' titles on both OLED screens, and after a few seconds the Vector's SD card will mount onto your computer. Look in the **F12_VS** folder for the PROJECT folder, PREFS and calibration files.

For information on firmware updates, visit vector.five12.com.

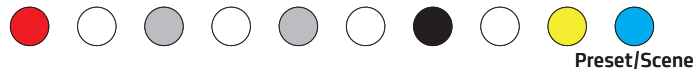
Calibration Files

The Vector sequencer comes with one or two data files that store calibration data for the Pitch CVs. The **VSCAL.DAT** is for the Vector, **EXCAL.DAT** is for the expander. If you purchased your Vector and Expander together, the two files may be pre-loaded. If you purchased an Expander separately, you can download the file from <http://vector.five12.com>.

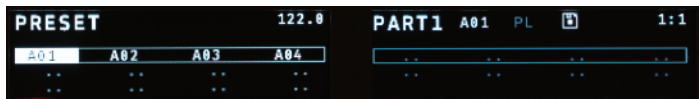
About SD Cards

Your Vector Sequencer comes with a high quality SD card that has been tested to work both speedily and reliably. Only SD cards from SanDisk and Transcend are recommended, in sizes from 8GB to 32GB.

Presets, Playlists & Scenes



PRESETS



Each part on the Vector supports up to 20 presets, depending on the maximum length of the sequence. Press the **Preset** button to see all the presets for the current part in a grid. Empty presets are shown as "..", non-empty presets are shown by name. To select a new preset on the current row, use the white mini-keyboard buttons. To change rows, use encoder 9.

Use **Shift+Preset** to duplicate the current preset into an empty preset 'slot'. Use **Shift+Clear** to empty out a preset. Preset changes are quantized to bars by default. This setting, called **PQNT** can be changed on the 2nd Control page for each part.

PLAYLISTS



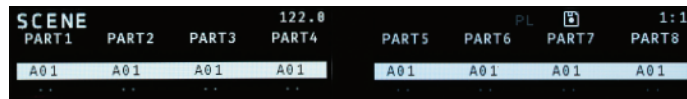
To edit the name and playlist settings for a preset, push **Preset**, then **Prev** or **Edit**. Alternatively, use **Prev/Next** to move between **Preset Edit**, **Preset** and **Scene** pages.

The playlist is simple in concept, but very flexible. Each preset can:

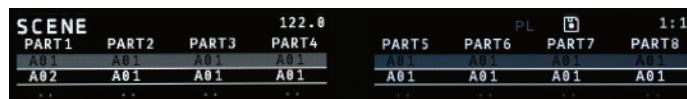
- Play forever (by default).
- Play for x beats/bars then go to a later preset.
- Play for x beats/bars then go to an earlier preset and repeat y times.

Use encoders 4-8 to edit the playlist settings for a preset. The master on/off switch for all playlists is on the first **Globals** page.

SCENES



The **Scene** page displays the current presets for all 8 parts. You can directly set the preset for a part in the current scene using the 8 main encoders. Use encoder 9 to move between scenes. To trigger a new scene, use the **Cue** button. Scene changes are always quantized to a bar.



TIP: To not make any changes to a part when cueing a new scene, use ".." for the preset setting for that part in the scene.

External Sync



Global

In addition to its internal clock, you can synchronize the Vector to DIN Sync, MIDI Beat Clock, or an external clock pulse. If the clock source in your modular can generate a run/stop CV and clock ticks at 24PPQN (parts per quarter note), you can use the **Run & Clock** jacks for DIN Sync. For all sync sources, the Vector will internally up-rez the signal to 480PPQN for accurate rendering of features like Pitch Glide, Groove and Ratcheting. Sync settings are on the first page of **Globals**.



DIN Sync:

1. Connect a DIN Sync source to the Vector through the **Run & Clock** jacks, the **STG Sync** connector on the back panel, or the **DIN IN** Jack on the Jack Expander module.
2. Select 'RC24' for Sync via the **Run & Clock** jacks, 'STG' for sync via the STG Sync connector on the back panel, or 'JxDIN' for DIN Sync via the **DIN** input connector on the Jack Expander.
3. Start playback from your DIN Sync source per usual.

MIDI Beat Clock:

1. Connect a MIDI Beat Clock source to the Vector via the **USB A** or **B** jacks on the front panel, or use the 5-pin MIDI Input connector on the Jack Expander.
2. In **Globals**, page 1, select 'USB-A' for sync via the USB 'to device' jack, 'USB-B' for sync via the USB 'to host' jack, or 'JxMIDI' for sync via the MIDI Input on the Jack Expander.
3. Start playback from your MIDI Clock source.

External Clock Pulse:

1. Connect a clock pulse (gate or trigger) running at one pulse per beat to the **Clock** jack on the Vector. Optionally connect a reset pulse to the **Reset** jack.
2. Select 'CR/1' to use the **Reset** input as a global reset for all parts, or use 'Cr/1' for optional reset. To set a part to reset in Cr/1 mode, on the **Control** page for that part, pick 'EXT' for **Reset**.
3. Start and stop the Vector using the **Run** button.

TIP: For primary sync, the Vector will track smooth tempo changes well, but for random or 'patterned' triggering of sequences, use one of the **T1 - T6** rate modes for manually stepping a sequence.

Vector Sequencer Project - All projects stored on micro-SD Card

Part - Eight parts per project

Preset - Up to 20 presets per part depending on sequence length

Note Sequence - 16, 32, or 64 steps long

Sub-Seq 1

Sub-Seq 2

Ext Mod

**Preset
Playlist**

Scenes

Globals - Tempo, Key, Scale, Sync, Output Routings, etc.