pm

psychicmodulation

PULSECODE

PCM DRUM MACHINE
VST/Audio Units for Windows & Mac 64-bit

(v1.3)

Table of Contents

Introduction to PulseCode

PulseCode is a PCM Drum Machine that pays tribute to the gritty, lo-fi sounds from the late 1980s. PulseCode takes a different approach to "sample-based drum synthesis", using strategic layering concepts that are based on the various techniques used by producers of that era to get massive drums sounds. All of the sounds supplied with PulseCode have been resampled using vintage 12 and 13-bit samplers to stay true to the era. Gated reverb is effortless with PulseCode, as each sound includes it's own sampled reverb layer recorded from a vintage unit from the same time period. These techniques can usually be tedious and time consuming to recreate, but with PulseCode they are second nature. PulseCode's Drum Editor lets you tweak and shape the different layers of each Sound Element to create totally new sounds from the original source sample. The result gives you that huge drum sound so prevalent in the 80s and often heard in EBM, Industrial, Electro, Coldwave, SynthPop and Synthwave. But PulseCode was also designed with experimentation in mind, and can easily be taken into uncharted territory for a more modern and unique approach to these styles and beyond.

PulseCode's Pattern Sequencer makes it easy to lay down a beat on the fly. From there, you can make polyrhythmic modifications with individual speed and length for each drum. Flams and Multi-Function Accents per step allow for even more interesting grooves. And for some realtime manipulation, Flow and Fracture controls can give your rhythm life or break it all down into chaos.

To accompany the Pattern Sequencer is a Drum Fill Arpeggiator, where fills and rolls can be played on your MIDI keyboard in time with the beat. In fact, PulseCode takes full advantage of MIDI controller functionality, integrating the use of the Modwheel and Pitchbender to control various functions.

PulseCode is a very expressive drum machine that is meant to be played like an instrument, inviting hands-on control and bringing the fun back to beat making.

Installation

To install PulseCode, simply double-click on the installer file and follow the on-screen prompts. If you just want to try out a demo version, download the correct installer from the **PulseCode page**. The demo version is fully functional with the exception of occasional sound dropouts. (*The demo version is independent of the full version, so it will need to be uninstalled separately.)

System Requirements:

Windows: Windows XP or higher 32/64 bit

Mac: OSX 10.5 or higher 32/64 bit

After installing the plugin into your chosen plugin folder, the installer will copy two folders, one for banks, the other for presets, into the following locations based on your OS:

> **Windows:** the folders are located in **C:/Users/Public/Public Documents/PulseCode/**.

> **Mac:** the folders are located in **Users/Shared/PulseCode/**.

In order for the plugin to function properly, preset and bank files must be saved to the correct locations. Presets, Sub-Presets and MIDI configurations should be saved to the 'Presets' folder. Banks should be saved to the 'Banks' folder. This will allow you to access your presets directly from the plugin's interface via dropdown lists. For more info about the Patchbank system, **see this section.**

The Installer Package will install the included sounds, which are referred to as Elements. These are the foundation of PulseCode's sound. For more info about what makes up an Element **see this section.**

Drum Engine

The top half of PulseCode's interface is dedicated to sound design of the drums, as well as audio and midi related functions. The bottom half is for the Pattern Sequencer and all of it's related functions. In this section we will look at the top half, specifically the Drum Engines.

There are a total of 8 Drum Engines, one for each different 'drum type'. The Engines all have identical layouts and controls, and though they are dedicated to each their own specific type of drum, each Engine can actually use any drum type if needed by using the file selector to browse Elements and Presets in different drum folders. So for example, if I click the dropdown list for Sound Elements or Sub-Presets for Perc1, I will get a list of percussion sounds. However if I wanted to load a Tom drum in that engine instead, I can just choose the 'File Selector' option at the top of those lists and simply navigate to my Tom drum folder to load the sound I want.

The Drum sounds that are loaded into each of the Drum Engines are referred to as Elements. I will go into detail below regarding what an Element is and how it corresponds to the Drum Engine's control panel.

Sound Elements

Elements are the foundational source material for PulseCode's sound. An Element is made up of several layers that are designed to load into the Drum Engines. PulseCode is supplied with several different types of Elements which reflect their own dedicated Drum Engines. These are Kick, Snare, Clap, Tom, Perc, HiHat and Cymbal. (Note that Perc 1 and 2 share the same Elements which are comprised of several different types of percussion and fx sounds.) For an up-close look at the different types of Elements, have a look at **this section**.

Each Element has it's own set of layers which are based on it's primary Core. Once an Element is loaded into a Drum Engine, it's layers are reflected on the control panel. To load an Element, click on the dropdown list at the top left of the control panel. Each Drum Type has it's own list of Elements that correspond to that particular drum type (Kick, Snare, etc.). However, all the Elements can be interchangeable by using the 'File Selector' to choose Elements from different drum folders.

Use the left/right arrows to quickly browse through the list of Elements to find the right sound.

The available sounds to choose from are based on the Elements that are installed in PulseCode's drum folders. Several Elements are supplied with PulseCode but many more will be available in the future. For more detailed info about where this folder is located and what is stored in it, have a look at the Patch section **here**.

Once a Sound Element is loaded, it can be edited using the controls on the Drum Engine's panel. Choosing a different Element will not alter the

settings of these controls, rather it will simply load a different set of sounds into the Engine. To save and load entire drum sounds with settings intact, use the Sub-Preset system. More info about that **here**.

The overall pitch of the Element is controlled by the Main Pitch knob. The Main Decay affects the overall amplitude decay of the entire Element, but keep in mind that the Air layer is only affected by the Main Decay when the Gate is in use.

The layers of the Element are separated into four main sections on the control panel. These sections are covered in detail below.

Drum Core

The Core layer is the primary sound of the drum, that of which all other layers are based. The Core is actually split into two layers, which are the original sound, and a lo-fi version of that sound. The lo-fi layer is essentially the grit that comes along with downgraded sampling at lower rates. This Grit has been specially processed to retain the higher frequencies to get a specific 'crunch'. Mixing Grit into the Core is represented by the LoFi Mix control directly beneath the Element selector. Moving the slider to the right will mix in some lo-fi grit into the Core sound of the Element. If the Mix control is fully right, only the LoFi sound will be heard. The Grit layer can be detuned from the original using the **Tune** knob. This can help beef up the overall Core layer, similar to the way a sub-oscillator would. The Main Pitch and Decay controls below this are universal for all of the Drum layers.

Drum Hit

The next stage of the Drum Editor is the Hit Layer. This layer adds extra top end to the drum sound. This can give the drum more of an initial 'attack'. The Hit layer can be Tuned separately (+ or - 1 octave). It also has it's own Attack and Decay settings. The Attack is very short, and is meant to dull the sound if it is too sharp, removing some of the transient.

This layer has it's own multimode Filter. Choose from a range of filter types like highpass(HPF), lowpass(LPF) and bandpass(BPF). Notch will carve out a frequency range specified by the Cutoff. Peak will do the opposite, setting a peak in the specified frequency range. Adjust the Res control to narrow the bandwidth. The Filter can also be turned off if no filtering is required.

Use the orange Level knob to adjust the overall volume of this layer.

Drum Body

This layer will add body and substance to the drum. It will typically be in the form of a low-end layer, but for some sounds where bass is not suitable, this layer might take a different form. With hihats and cymbals for example, this layer will be a copy of the Core sound, which can be down pitched from the original. Essentially the Body layer will add thickness and beef up the drum in some aspect. The Body layer can be tuned down an octave (-12/0), acting similar to a sub oscillator.

The **Bend** control corresponds to the Bend Modulator and serves as a sort of envelope to the Body's pitch. Bend Modulation is covered in depth [here.](#) Turning this control up will bend the pitch based on the settings of the modulator.

A single Decay control is used to set the length of the sound. Use the orange Level knob to adjust the overall volume of this layer.

Drum Air

Air is an atmospheric layer which can create an expansive backdrop for making big, powerful drums. The Air layer is a combination of both reverb and noise. The two layers can be mixed to taste using the crossfader. This is typically used for mixing a little white noise into the reverb signal, but can be used in different ways if desired. For some sounds the Noise layer might take a different form. For more detail about the different sounds used for specific drum types, see **this section**.

The Air layer has it's own multimode Filter which affects both Reverb and Noise. Choose from a range of filter types like highpass(HPF), lowpass(LPF) and bandpass(BPF). Notch will carve out a frequency range specified by the Cutoff. Peak will do the opposite, setting a peak in the specified frequency range. Adjust the Res control to narrow the bandwidth. The Filter can also be turned off if no filtering is required.

The Attack/Decay settings are for amplitude. The Attack control can be used to create interesting effects like non-linear reverb. Decay is used to set the length of the Reverb/Noise.

The **Gate** function simulates sidechaining to the Core layer. Turn the Gate control up to increase the Gate effect. When the Gate is set to full 100%, the reverb/noise will respond to the Main Decay control so that the reverb cuts off as soon as the Main Decay ends. This will create a "gated reverb" effect which was widely used on drums in the 80s. If the Gate control is turned down to 0, the reverb will only respond to it's own decay control. The Gate can be adjusted between these two settings to get the right sound. Use the orange Level knob to adjust the overall volume of

this layer.

When Hard Gate mode is active, the Gate has a more pronounced effect. The Air signal will play at full volume, but cuts off abruptly when the Main Decay has ended, creating a full burst of sound, followed by a sharp cut. This is useful for achieving a heavier, more extreme sound. When this mode is activated, the Level, Attack and Decay controls are bypassed.

Activate Direct Mode to route the Air signal directly into the Drum Mixer. This allows the Reverb/Noise to bypass the Main Filter, Compressor and Bend Modulation. When Air is used in this way, it will have a more natural effect, where the reverb acts as a send rather than as part of a sampled sound.

Compressor

All of the layers are summed up into a Compressor, before reaching the Main Filter. The Compressor can be used to tame or squash a drum, depending on how hard you push it. A dry/wet mix control is provided for getting the right balance. Here's a rundown of the Compressors controls and what they do:

Threshold (db): The compressor will reduce the level of the drum that exceeds this threshold

Ratio: Ratio: Determines how strongly the compressor will respond

Knee: Sets the curve at which the compressor starts to work; Set to 0 for Hard Knee

Attack (ms): Sets the time it takes the compressor to kick in. This will allow transients through at longer attack times

Release (ms): Sets how long it takes for the level to return to it's uncompressed state

Gain: Adds makeup gain to the compressed signal

Mix: (Dry/Wet) Mixes the straight signal with the fully compressed signal; This can be a convenient way to get parallel-style compression

*Note: If Air is in Direct Mode, it will bypass the Compressor completely.

Bend Modulation

Stationed to the right of the Air/Gate controls resides the mysterious Bend Modulation. This modulator has two different modes, LFO and HFO, which serve for completely different functions.

When in LFO mode, Bend Modulation acts as a kind of wave envelope, shaping the drum with a retriggering LFO sinewave. Experiment with the **Rate** and **Phase** controls to get envelope-like shaping of Amp, Filter and Body Pitch. The **AM** control is specifically for amplitude modulation. Filter and Body have their own dedicated Bend Levels located within their set of controls.

HFO mode operates quite differently, providing a high-frequency modulation for creating metallic, ring-mod style effects. In this mode, the Rate control adjusts the frequency of the effect. Using AM in this mode creates a kind of ring modulation. Using HFO on the Filter results in Filter FM. When used on Body Pitch, it will create a strange, pitch-mod effect.

*Note: If Air is in Direct Mode, it will bypass all Bend modulation completely.

Filter
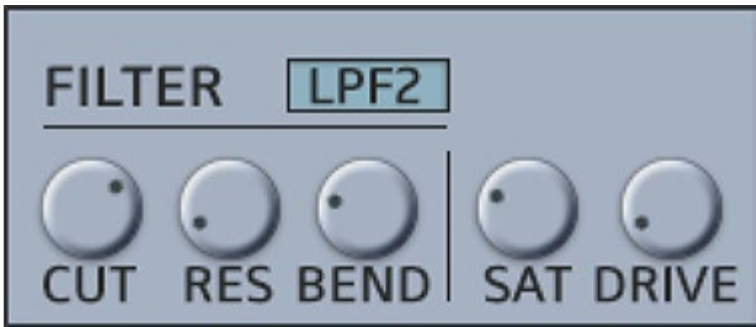
Each Drum Engine has it's own Multi-Mode Filter that shapes the overall drum signal. This filter is different than the dedicated layer filters in that it contains a few extra filter types for achieving a different character. The Filter is followed by a Saturation Driver to finalize the signal path.

Click the selector above the Filter's controls to choose the Filter Type. These are the options:

Off: The Filter is bypassed.

**The first set of filters in the list are all 24db with a nice resonant character for coloration.

LPF: A 4-pole 24db Lowpass Filter

HPF: A 4-pole 24db Highpass Filter

BPF: A 4-pole 24db Bandpass Filter

Notch: The Notch Filter creates a narrow dip based on the cutoff frequency. Increasing the Resonance will narrow the notch.

Peak: This is the opposite of a Notch Filter, creating a Peak that boosts the frequency based on the Cutoff setting. The Resonance

will narrow the peak.

**This 2nd set of filters are all 12db with much less resonance for simple dulling or brightening the sound without introducing too much color to the drum.

LPF2: A 2-pole 12db Lowpass Filter

HPF2: A 2-pole 12db Highpass Filter

BPF2: A 2-pole 12db Bandpass Filter

The Saturation Driver can be used to add warmth to the overall drum. Turn the **Sat** knob up to increase saturation of the signal. The Drive control next to it will increase the Saturation Drive for further distortion of the tone. Drive will only function if saturation is above 0.

*Note: If Air is in Direct Mode, it will bypass the Filter and Saturation completely. However, Air still has it's own Filter that can be used separately from the drum.

The Drum Mixer

The Drum Mixer is where you will find main volume and panning controls for all the drums, as well as output routings.

Click on the Mixer button to bring up the Drum Mixer panel. Each column of controls will correspond to the drum whose button is directly above. Adjust the slider beneath each drum to control the volume of that drum. Directly above the volume sliders are **Boost** switches for boosting the volume of that drum. This will increase the volume by 5db. The VU meter to the left displays the volume output.

Beneath the Level sliders are controls for adjusting the **panning** of each drum. The numerical readout displays an L(-) or R(+) to show if the panning is set left or right.

The next row of controls are for **Choke Targets**. Click on the selector to choose which other drum will be choked by the drum of that column. For example, if 'Snare' is chosen as the Choke Target for the Kick, then each time the Kick drum hits, the tail of the snare ends. This can be useful for open/closed hihat effects on any given set of drums.

At the very bottom of the column is where each drum can be routed to different **audio outputs**. This feature is explained in greater detail below.

The two large knobs to the right control PulseCode's main **Volume** and **Tuning**. The Tune knob will adjust the overall pitch of all drums combined.

Multiple Outputs

PulseCode supports Multiple Audio Outputs. This allows you to route each drum to it's own channel in order to use external audio effects for individual drums.

Each Drum Engine can be assigned to it's own audio output. These outputs default to channel 1. Click on the dropdown boxes to select a different output (1-8).

Setting up multiple outputs within the Host will work differently depending on the DAW.

In Cubase, this is as simple as clicking 'Activate Outputs' to choose which outputs are being used.

In Ableton Live, this takes a few extra steps. You will need to create a new Audio channel and assign it's output to PulseCode, then choose the output needed. A new Audio channel will be needed for each extra output.

MIDI Options

The MIDI panel displays options for everything related to external MIDI triggering (ie. triggering from a MIDI keyboard controller).

Each drum is hardwired to it's own note or set of notes. These are indicated directly beneath each Drum Selector on the MIDI panel. Each note will play it's specified drum on all octaves at higher and lower pitches. Middle C plays the base pitch. To clarify, below is a list of which key plays which drum, they will play on these notes for every octave:

Kick: C

Snare: D

Clap: E

Tom: F, G, A

Perc1: C#

Perc2: D#, F#, G#

HiHat: A#

Cymbal: B

There is a 'Fixed Velocity Mode' that can be turned on or off, located on the 'About' panel at the top right of the interface. When this option is set to 100%, all notes will play at full volume. Set this option to 'Off' for full velocity, which means volume is based on how hard you hit a key.

The Modwheel and Pitchbender can be routed to the Flow and Fracture for each drum. There are two rows of numerical controls. **Modwheel to Flow** will set the level of Flow to be controlled by the Modwheel for each drum. **Pitchbend to Fracture** sets the level of Fracture to be controlled by the Pitchbender. Flow and Fracture are explained in detail **here (Flow)**, and **here (Fracture)**. If the controls are set to 0 (---), then the modwheel and pitchbender will do nothing. If set to 100, they will control the full amount of these functions. For more info on working with MIDI control, **see this section.**

*Note: Sub-Presets for Flow and Fracture can also save it's MIDI settings, and can then be loaded into any drum lane.

The Drum Fill Arpeggiator, which is a major aspect of the MIDI panel, is an interactive feature that allows the user to play Fills and Rolls via MIDI. This feature is covered in greater detail below.

Drum Fill Arpeggiator
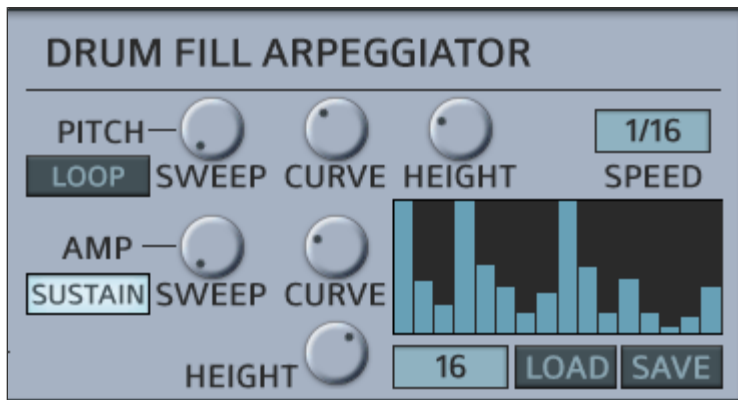
The Drum Fill Arpeggiator is a hybrid Roll Generator that can play arpeggiated fills. Fills and rolls can be played on a MIDI keyboard using the notes that each drum is assigned to. When any **Fill** switches are activated beneath each drum's column, that drum will play arpeggiated hits. If more than one drum is set to Fill, then holding the notes for those drums will play through an arpeggiation cycle.

The main controls for the Drum Fill Arpeggiator are located on the right side of the MIDI panel. There are several options available here for designing fills and rolls, such as the Velocity Sequencer for setting the volumes of the drum hits in the arpeggio, as well as controls for creating fade-ins and pitch sweeps. These options are explained in detail below.

The **Pitch Sweep** konb sets the time it takes the pitch to reach the value set by the Height control. **Pitch Curve** sets the time it takes for the pitch to drop back down to it's initial value. These are both based on the Pitch's **Height** control. If Height is set to 0, then there is no change in pitch. The higher the Height's level, the more the pitch rises and falls. This Envelope can be looped by switching on the **Loop** button. This pitched loop will follow the Velocity Sequencer's length. So, for example, if the Velocity Sequencer is set to 8 steps, the Pitch Envelope Loop will start over after 8 steps.

The **Amp** controls operate in a similar way, with **Sweep** setting the time it takes the volume to reach the value set by it's own **Height** control, creating a fade-in effect. **Curve** sets the time it takes for the volume to fade out. If the **Sustain** button is active, the Amp Curve has no effect,

because the volume will be sustained based on the Height level. If Sustain is off, the curve can be used to set how long the roll will play until the volume fades out. This can be useful for creating short rolls and fills. Keep the Sustain activated to play the drums like an arpeggiator with hits being continuously triggered as long as a note is held.

The 16-step **Velocity Sequencer** can be used for creating customized drum fills by altering the volumes of the hits in the arpeggio. Drag the mouse across the Sequencer levels to make quick adjustments and create your own velocity grooves. When you hold a Fill note on your keyboard, you will hear the volume change with each hit, based on the levels in the sequence. If the Amp is sustained, this velocity sequence will continue looping until the note is released. Drag the levels of the sequencer up to increase volume, or down to decrease the volume of the hits for each step. Use the Amp's Height control to set the max volume of the Velocity Sequencer.

Beneath the Velocity Sequencer is a popup selector for choosing the **Length** of the sequence. It can be set anywhere from 1 to 16 steps. The Pitch Loop function will be based on the length of this sequence.

The **Speed** control sets the tempo-synced rate of the Arpeggiator and it's accompanied Velocity Sequencer. This ranges from 1/4 to 1/32 with dotted timings in between.

All of the settings of the Drum Fill Arpeggiator can be saved and recalled using the **Load/Save** buttons. This functions in the same way as other Sub-Preset menus. For more about sub-presets, visit **this section**.
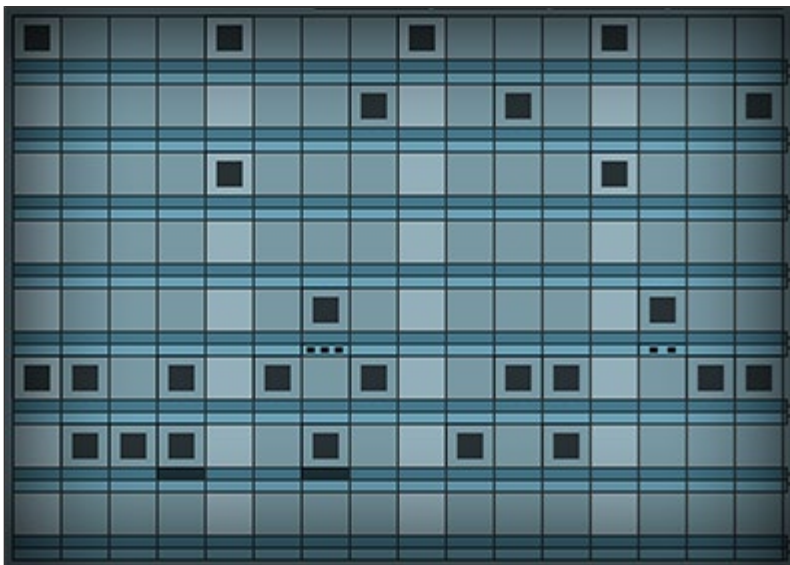
The Pattern Sequencer
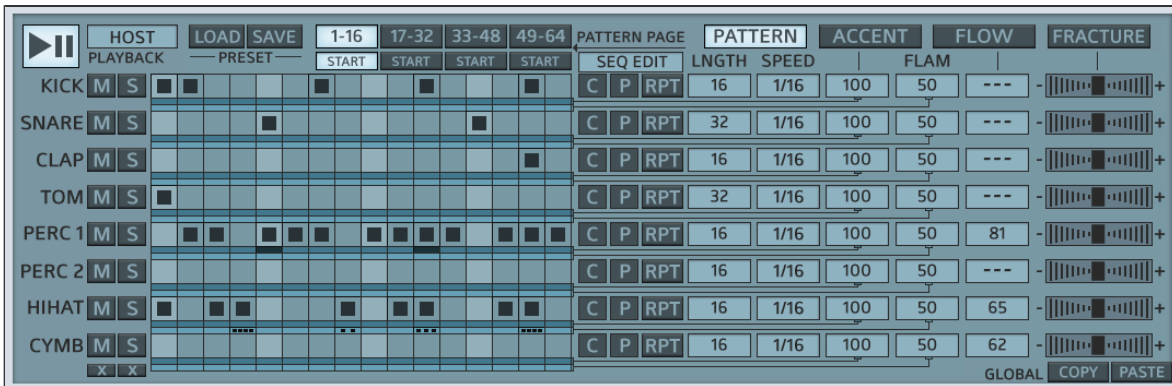
The bottom half of PulseCode's interface is dedicated to the Pattern Sequencer and all of it's related functions. The Sequencer panel is made up of multiple pages that display the controls for specific sequencer related functions. There are a total of 8 sequence lanes, one for each drum, followed by parameters for controlling the various aspects of each.

The big **Play** button at the top left starts the sequence. If set to **Host** mode, the Pattern Sequencer will follow Host Play, meaning it will not play until Host Play is active, and will stop when Host Play is stopped. If PulseCode's Play button is off, it will bypass Host playback. While in Host mode, PulseCode's sequencer will follow the Host's position, meaning if playback in the Host starts in the middle of a bar, PulseCode will also start in the middle of that bar in it's own pattern, based on the exact position as the Host.

When set to **Manual** mode, PulseCode's Play button will start/stop the sequence regardless of Host playback. While in this mode, PulseCode's sequencer will not follow Host position and will always start from the beginning each time Play is activated. Manual mode can be ideal if the internal Pattern Sequencer is not needed. For example, if you wanted to use you're hosts sequencer instead to create drum patterns. Also, this mode can be useful for when you want to play the Drum Fill Arpeggiator only, without following the Pattern Sequencer.

Below I will discuss the main aspect of the Pattern Sequencer, the Pattern Grid.

The Pattern Grid

The Pattern Sequencer displays a grid made up of 8 rows of 16-steps. Each of these rows, or Sequence Lanes, are assigned to their own drum, which are labeled to the left. As the pattern plays, a highlighted column will move across the sequencer. This indicated the sequencer's position. If any sequencers are playing back at a different speed or different length, the highlighter for that sequencer lane will reflect that. Input a step into the sequence by clicking anywhere on the grid. Click again to remove a step. If several steps need to be added across the lane, just click and hold while dragging the mouse to fill in the steps.

Note: If the steps of a particular lane need to be shifted left or right, this can be done using the Pattern Shift function directly to the right of the Pattern Grid. It's on a hidden panel that can be accessed by switching the column of editing controls from 'Seq Edit' to 'Seq Shift'. This will then display the left/right arrows for moving the steps. More about this column of editing controls later.

Beneath each step are two small rectangular input boxes. These are for inputting **Accents** and **Flams**. The top rectangle, directly beneath each step, is for adding Accents. These are input the same way as the steps are. For more info about how to use the Accents, see **this section**. The area below the Accents are to input Flams. Click this area to add the number of Flammed steps desired. Learn more about how Flams work **here**.

The Pattern Grid can save and load it's own sub-presets. This will only save the contents of the grid (steps, accents and flams). For more about how sub-presets work, visit **this section**.

*Note: There is also a Global Copy/Paste function that will copy and paste the entirety of the Sequencer panel from one preset to the next. This copies all the settings on the Pattern, Accent, Flow and Fracture panels. (*Warning: If you paste into any preset, you will lose that preset's settings for these controls, so be sure you want to do this.) This can be a very useful feature if you want to use PulseCode presets as 'drum kits'. You will be able to try your sequence with many different kits by simply copying it over to different presets. Load up the Factory Kits Bank to use PulseCode without any pre-filled sequences. You can build your own patterns and copy them from one preset, or Drum Kit, to the next.

Pattern Pages and Offsets

There are 4 pages of 16-step patterns, which make up a total of 64 steps. The Pattern Pages can be switched between for editing by using the Pattern Page buttons at the top of the Sequence Grid. These are labeled with the range of steps for each page **[1-16]**, **[17-32]**, **[33-48]**, and **[49-64]**. Selecting different pages will not alter playback, it will only display the page for editing. However, the starting point of the pattern can be offset using the Start switches directly below these buttons. This is explained below.

Pattern Offsets can be used to force the pattern to start on a different page by clicking the **Start** switches below each page group. When Start is activated below a page group, the pattern will start on the first step of that page. For example, if Start is activated beneath 17-32, then the pattern will start on step 17. If any sequences are longer than 16 steps, they will wrap around to the following page.

Pattern Offsets can be used in a variety of ways to create realtime variation during playback. As an example, Pattern Offsets can be used to build a song. If the sequencers are all set to 16-steps, then each pattern page can be set up as intro, main beat, buildup and breakdown. Then the Start buttons can be used to trigger the 4 different patterns during playback.

To control Pattern Offsets via MIDI, you can assign a single knob or slider to the row of Start switches. They will act as a single control that can be tweaked during a live performance and automated.

*Tip: You can also assign the top row of Pattern Pages to the same MIDI cc, so that the current Pattern Page will be displayed as the Pattern
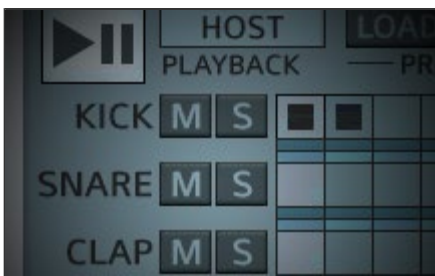
Offsets are changed.

Sequence Lanes and Controls

Each sequence lane has it's own set of controls which provide various ways of controlling it's sequencer. These are covered below.

Each drum sequencer lane is displayed starting with the drum's name. This means that the lane next to each label is for that drum only.

Mute/Solo

Followed by the drum's label are Mute and Solo buttons for that drum. The Mute button will silence the drum's audio output, not just the sequence. It's simply placed in front of the sequence lane out of convenience and ease of access. Use the Solo switch to force only that drum's output to be heard. If multiple Solos are activated, they will also be heard. Beneath the Mute/Solo columns are X buttons, which will cancel all active Mutes or Solos. For example, if several drums are muted, clicking the X button beneath the Mute column will turn off all of those mutes.

Sequence Edit Functions

To the right of each sequencer's grid are 3 buttons for editing the sequence. **C** is for **Copy**. Use this to copy the steps of one sequence lane to another. This will copy all 64 steps including the Accent and Flams of

that sequence. This does not copy any other settings on the sequence lane. **P** is for **Paste**. Use this to paste the copied sequence onto another lane. **RPT** is for **Repeat**. Pressing this button will repeat the first 16 steps of a sequence onto the next 3 bars. ****Warning-** this will overwrite any steps on the next 3 bars, so be sure you want to do this. This option is primarily meant for quickly creating a 4-bar sequence based on the first 16 steps, that can be edited with variations afterwards. **Make sure to set the sequencer's Length to 64 if you want to hear all 4 bars.

Sequence Shift

Click the box above the editing controls to display the Sequence Shift functions. These arrows will move a sequence lane forward or backward, step by step. This can be very convenient for times when an entire row of steps need to be shifted over slightly.

Length:

This column of controls sets the length of the sequence for each lane. Each sequence can be set to different lengths which can create polyrhythms for more interesting patterns. The Length control is in the form of a dropdown selector for the convenience of quickly choosing which step the sequence will end on. If this control is assigned to a MIDI controller, it can be used as a knob or slider for live performance.

Speed:
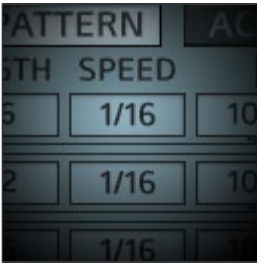
This is for selecting the speed of the sequence. Each sequence can run at it's own speed. The options range from 1 beat to 1/32 of a beat, with dotted and triplet timings in between. For most presets, this control defaults to 1/16.
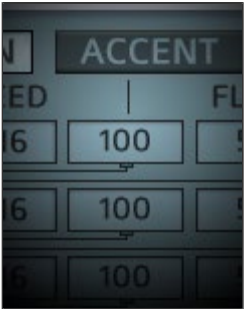
Accent:

This column is for the main Depth controls of each sequence lane's Accents. Accents can be used to place emphasis on certain steps by changing the sound of the drum for that step only. To specify how the Accents will operate, click the large Accent button above this column to open the Accent panel. Here you will be able to customize what an Accent step does. More about using Accents **here**.

Flam:

This column is for the Depth controls for the Flams of the sequence. If set at 100, Flams will have full effect. If set to 0, the flams will not be heard. Set this in the center for a more subtle flam effect. More about using Flams **here**.

Flow:

This is the main Depth control for the Flow of the sequence. Flow is used to give movement to the sequence over time. The Flow button above it will open the Flow panel for specifying how the Flow will operate. More about using Flow **here**.

Fracture:

These crossfading sliders control the Fracture function. Fracture is for building or breaking a sequence. Move the sliders right for building upon, or left for breaking down. The sliders are designed to snap back to center for ensuring momentary use, but they can be set to latch in the Fracture panel. Enter the Fracture's panel by clicking the large Fracture button above the column of sliders. This is where you will be able to define how Fracture operates. Learn more about Fracture **here**.

Accents
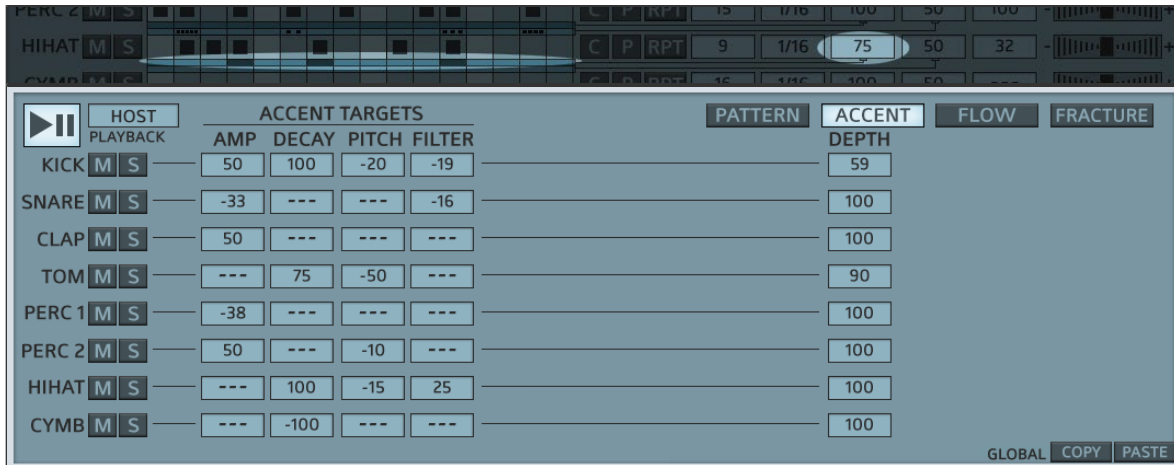
Pattern Accents can be activated by clicking on the small rectangular box directly beneath each step on the Pattern Grid. When the rectangle is darkened, that means an Accent is active. Below that is another rectangle, which are for Flams. Flams are discussed in more detail later, but here I will focus on the Accents and how to set up what parameters the Accents will affect.

To enter the Accent editor panel, click on the large Accent button right next to the Pattern button (top right). This opens up a panel displaying an entirely new set of controls that are solely dedicated to the Sequencer Accents. The Depth controls directly under this switch are the same ones reflected on the Pattern panel, and control the level of the Accents for that lane. (All of the Main Depth controls are located on both their dedicated panels as well as the Pattern panel for your convenience.) Looking to the left of the Depth control column you will see controls for setting what the Accents modify and by how much. Each drum's Accent can modify the Amplitude, Decay, Pitch and Filter of that drum simultaneously and in varying degrees. If the controls are at 0 (---), then there is no change to that parameter target. The controls can go above and below 0 to get positive or negative values. So for example, if the Accent Pitch is set to -50, any accented steps will result in the pitch of that drum being lowered halfway below the center point. If the Accent Filter control is set to +50, the filter will open for that same accented step. Depending on how these controls are set up, you can get a wildly different sound for any steps that have an accent placed beneath them. For most presets these controls

default to only raising the amplitude by 50%, but with a little experimentation the Accents can be used for much more than simply making a step louder. To get back to the sequencer, just click the Pattern switch next to it.

Tip: To get open/closed hihat effects, set your Main Decay low, while setting the Accent Decay high. Now any Accent you place under a step will lengthen the decay for that step. (Tip2: If you're using a closed hat Element, here's a trick that will turn it into an open hat. The Noise layer for all Closed HiHats are actually a metallic cymbal noise specifically for extending closed hihats. So using the Gate on this will work perfectly for this accented hihat trick.)

*This panels settings, along with all of the other settings on the Main Sequencer panel, can be copied and pasted to other presets using the Sequencer's Global Copy/Paste function. Just be sure you're ready to paste your settings, as this will overwrite all of the settings of the Main Sequencer panel for each preset.
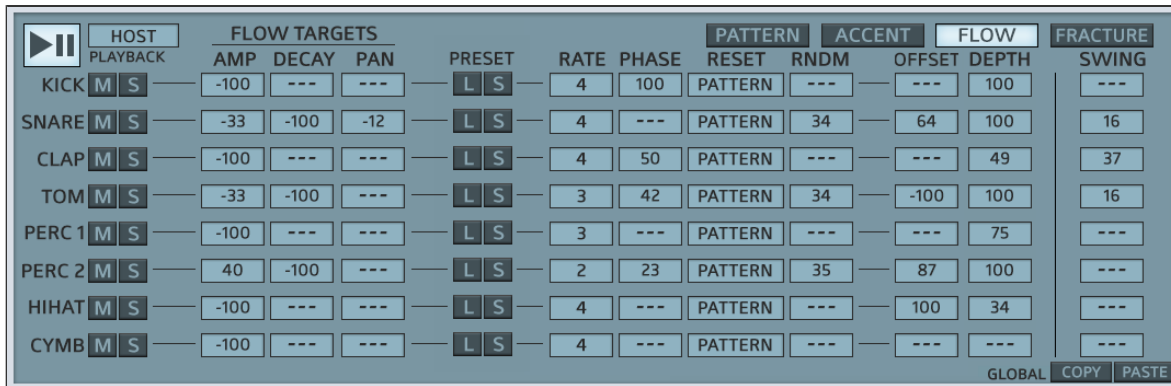
Flams

Back on the main Pattern panel you'll find the Flam column. This feature does not need a dedicated panel, only a depth control. Flams can be placed on each step below the Accents. When you click on one of the little rectangles below the accents, two dots will appear. This emphasizes that the step will play two hits. Clicking it again will result in an added dot, which signifies three flam hits. You can add up to five flam hits until a final click turns the flam off, returning the step to a single hit. The Depth of the Flam determines the volume of the flam hits. Set this control to 0 (---) for no flam. Set to 100% for full flam level.

There is also a universal control labeled 'Flam Feel', which is used to set the overall speed and behavior of the Flams. This is located on the About panel at the top right of the interface. Turn this to Fast for tight, glitchy effects, or Slow for longer, delay type effects. The Flam Timing Mode has three options: Speed, Tempo and Fixed. If set to Speed, the timing is based on the Sequencer Speed. If set to Tempo, the Flam Timing follows the host tempo. If set to Fixed, the Timing is fixed to it's own clock, ignoring sequencer speed and host tempo.

Flow

	HOST PLAYBACK	FLOW TARGETS AMP DECAY PAN	PRESET	RATE PHASE	PATTERN ACCENT FLOW FRACTURE RESET RNDM OFFSET DEPTH SWING
KICK M S		-100 --- ---	L S	4 100	PATTERN --- --- 100 ---
SNARE M S		-33 -100 -12	L S	4 ---	PATTERN 34 64 100 16
CLAP M S		-100 --- ---	L S	4 50	PATTERN --- --- 49 37
TOM M S		-33 -100 ---	L S	3 42	PATTERN 34 -100 100 16
PERC 1 M S		-100 --- ---	L S	3 ---	PATTERN --- --- 75 ---
PERC 2 M S		40 -100 ---	L S	2 23	PATTERN 35 87 100 ---
HIHAT M S		-100 --- ---	L S	4 ---	PATTERN --- 100 34 ---
CYMB M S		-100 --- ---	L S	4 ---	PATTERN --- --- --- ---
					GLOBAL COPY PASTE

What is Flow?

Flow is a specialty function that creates movement and variation in a static sequence. A typical use for this would be to give some life to boring "machine-gun" hihats. But Flow can be used in various creative ways as well.

Much like an LFO, Flow is a waveform that modulates over the course of the sequence based on a specified Rate. The Wave can be Offset and Phase adjusted to determine the right groove. Click on the large Flow switch to bring up the Flow control panel. From there you can see the Flow's Depth controls to the right. The Depth controls are reflected on both the Main Pattern panel as well as the Flow panel. Take a look at the included Flow presets to get a good idea of the many ways Flow can be used. Below will explain how the Flow sub-preset system works.

Flow Presets

On the Flow panel you will see a column of buttons labeled L and S, for Load and Save. This is for loading and saving sub-presets for all of the controls of each Sequence Lane of the Flow panel. So each drum can load it's own Flow settings. To load a preset, click on the 'L' button (Load). If you want to save your settings, click the 'S' button (Save). This will bring up the same list of presets that you can overwrite, but you can choose 'save as' to save it as a new preset. (*Be careful though, clicking a preset in the save menu will overwrite it without warning. So be sure you want to do this. If not, save it with a different name.) When you're ready to dive in

and program your own grooves, the info below will guide you through.

Starting from scratch

A good place to start is by choosing a blank preset (---). Here, the Rate will be set to 4 and only Amp (volume) will be affected. As you turn up the Flow Depth, you will hear the steps in-between the eight notes (2,4,6,8,10,12,14,16) drop and rise in volume, while the main steps (1,3,5,7,9,11,13,15) remain unaltered. This is because the wave starts at a center point (step1), and then dips (step2), returns to center (step3) and then rises (step4) before returning to center again (step5). As the Flow Depth increases, these volume changes will increase. From here, Flow can be tweaked to your liking to create different types of rhythmic effects. Changing the Rate to an odd number like 3 will instantly give you a more interesting groove, but more about that later.

Setting the Target Parameters

To the left are the Flow Targets. These are the parameters that are affected by the Flow modulation (Amplitude, Decay and Panning). Just like the Accent Target controls, these controls can enter the negative range. If a Target is set to -100, the modulation will dip, then rise, causing the Target parameter to drop in value before it rises. If a Target is set in the positive range (+100), then the modulation will rise before falling, causing an increase in value before tapering off. The Targets can all be set to their own levels in both the positive and negative ranges for getting very different modulations to happen simultaneously.

Controlling the Flow

Toward the center of the panel are a series of controls where the Flow's behavior can be further modified. The **Rate**, as mentioned previously, sets the overall speed of the Flow modulation ranging from 1-16. This translates to the number of steps the Flow Wave will run it's course. For example, if this is set to 4, the Flow Wave will start and complete every 4 steps. If set to 16, the Flow Wave will run through the course of all 16 steps before starting back over.

Use the **Phase** control to shift the center point of the Flow Wave. When Phase is at 0 (---), the Flow center point starts on the first beat. But if

Phase is increased to 100%, then that center point gets shifted to the right. So with a standard Flow Rate of 4, this would be on every off-beat. Remember what I said above about a Flow of 4 only affecting the in-between beats? Well setting the Phase to 100 reverses that, to where the Flow only affects the main beats and has no effect on the in-betweens. Of course changing the Rate will cause much more unexpected results and become more rhythmically interesting.

The **Reset** options are for determining how or if the Flow is reset. If set to 'Pattern', as it is by default in most patches, Flow will reset at the start of the sequence loop. For example, if the sequence is 16 steps in length, Flow will reset when the sequence returns to step 1. If you want more control over when the Flow resets, choose the 'Accent' setting. In this mode, placing an Accent anywhere in the sequence will retrigger the Flow. If Reset is set to 'Free', Flow will be free-roaming and never reset on it's own.

To give the Flow rhythm even more variation, randomization can be used for a bit of unpredictability. When the level of the **RNDM** control is increased, a little chaos is injected into the Flow Wave, causing it to jump and drop at random points.

Offset controls are provided to alter the minimum and maximum range of the waveform. For example, if set to 0 (---), then the wave modulates above and below the center point evenly, in an equal range. If Offset is set above 0 into the positive range, the low points of the wave will be brought higher, resulting in higher range modulation. If set below 0 into the negative range, the high points of the wave will be brought down, resulting in lower range modulation. This can be a good way to tame peaks or boost low points to get the perfect flow.

Controlling the Flow of one or more drums with the Modwheel can be set up in the MIDI panel. Read more about how to do this **here**.

Swing

Swing is a separate, but similar function. It's located to the right of the other controls on the Flow panel. Swing gives your patterns more of a groove by delaying the steps that fall between the eight notes. This can also be thought of as 'shuffle'. Swing can be set for each drum individually

at different amounts, which gives you greater control of the overall groove. If set to 0 (---), the drum sequence will be very robotic.

A related feature is available called **Humanize**. This one, however, is located on the About panel. This is a universal control for setting how precise you want PulseCode to play it's sequences. It can create natural timing fluctuations to simulate live playing. This can be set from Precise to Sloppy. Precise is fully robotic, which is great for techno. If set all the way Sloppy, it can get messy. Set somewhere in the middle if you're looking for a very subtle human feel.

*The entire Flow panel's settings, along with all of the other settings on the Main Sequencer panel, can be copied and pasted to other presets using the Sequencer's Global Copy/Paste function. Just be sure you're ready to paste your settings, as this will overwrite all of the settings of the Main Sequencer panel.

Fracture
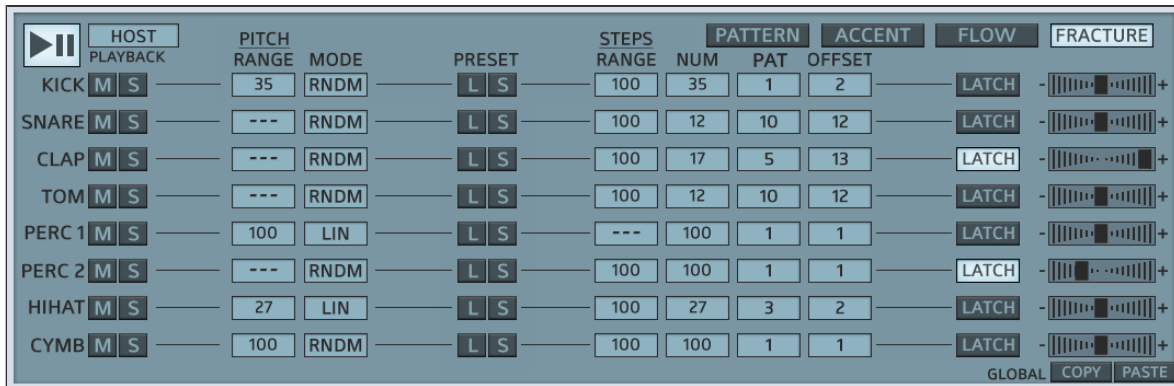
What is Fracture?

Fracture is an algorithmic control system that can create spontaneous builds and breaks with a single slider. Each drum has it's own dedicated Fracture control in the form of a crossfader, which will snap back to center when released. This is because Fracture is meant to be used as a momentary effect. Move the fader to the right for a sporadic and chaotic event where steps are added as the pitch goes out of control. Move the fader to the left for a breakdown of both the sequence and downward pitch drops. Let the fader go and all is back to normal.

By default, Fracture affects both the Sequence Steps and the Pitch of the drum randomly, but this can be adjusted to your liking and even set up for automatic beat building without even using the sequencer.

Click on the large Fracture button to bring up it's control panel. The panel is divided into two sections, one for Pitch and one for Steps. To the left you'll see the Pitch controls. These are explained in detail below.

Pitch

The **Range** control sets the Fracture's pitch range, which is the range that the pitch will be altered when moving a Fracture fader. Set this to 100% for the full Fracture treatment. If set to 0 (---) then Fracture will not have any effect on the pitch.

Pitch **Mode** consists of how the pitch will be altered when moving a

Fracture fader. If set to 'RNDM', the pitch will randomly jump around based on the position of the fader. If the fader is moved left, pitch will be randomly decreased. If the fader is moved right, pitch will randomly increase. When the fader is centered there will be no effect on the pitch.

If Mode is set to 'Linear', then Pitch Fracture is no longer randomized, but instead increases or decreases linearly, based on the position of the Fracture fader. This doesn't simply act as a pitch control, but rather sets the pitch per step. This allows you to go wild with the Fracture faders without bending the pitch. Each step gets placed into a new pitch range as the slider moves left or right. This can be useful for steady pitched buildups or breakdowns. Also when automating, it will always play back exactly as performed, since it is no longer randomized.

Steps

The **Range** control sets the range at which Fracture adds or removes steps from a sequence when moving the Fracture fader. This works very differently from the way pitch is handled, as this determines if, and how many steps are added or removed. If Step Range is set to 100%, then the Fracture fader will have full control of adding or removing steps from a sequence. If the fader is centered, then the sequence will play normally. As the fader is moved left or right, a random number of steps are added or removed until the fader is fully left (no steps) or fully right (full steps). If the Range is set to 0 (---) then moving the Fracture will not have any effect on the steps.

The **Num** control sets the Number Depth of hits allowed. So lets say Fracture Range is at 100%, and the Fracture fader is fully right. This will typically result in playback of every step of the sequence. But if the Number Depth is reduced, fewer hits will be allowed to be added (fader:right) or removed (fader:left).

The **Pattern** selector lets you choose from 16 alternate patterns which store the threshold order of Fracture hits. The Number Depth control acts as the threshold level, determining which hits will occur in the chosen pattern by limiting the number of hits allowed. **Offset** changes when the hits will occur by offsetting and wrapping them in the pattern. This allows you to create different timings by offsetting multiple drums that use the same pattern.

Control

On the left side of the Fracture faders are Latch switches. If these are activated, then the faders will hold their position instead of snapping back to center. This can be useful for creating algorithmic music that continuously randomizes with a mind of it's own. Have a look at the Fracture's 'Algo Rhythms' sub-presets to get a good idea of what's possible.

Controlling the Fracture of one or more drums with the PitchBender can be set up in the MIDI panel. Read more about how to do it **here**.

Fracture Presets

In the center of the Fracture panel you will see a column of buttons labeled L and S, for Load and Save. This is for loading and saving sub-presets for all of the controls of each Sequence Lane of the panel. So each drum can load it's own Fracture settings. To load a preset, click on the 'L' button (Load). If you want to save your settings, click the 'S' button (Save). This will bring up the same list of presets that you can overwrite, but you can choose 'save as' to save it as a new preset. (*Be careful though, clicking a preset in the save menu will overwrite it without warning. So be sure you want to do this. If not, save it with a different name.)

*The Fracture panel's settings, along with all of the other settings on the Main Sequencer panel, can be copied and pasted to other presets using the Sequencer's Global Copy/Paste function. Just be sure you're ready to paste your settings, as this will overwrite all of the settings of the Main Sequencer panel for each preset.

Useful Features

Here are some useful features that you might have not noticed.

Numerical Readout
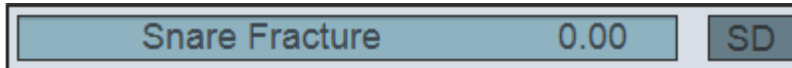
At the bottom left of the GUI is a small display screen that shows the numerical value of the currently selected parameter. These values can be edited by clicking on the numerical readout. This can be very useful for inputting specific values that would otherwise be too difficult to get by fine tuning. This can be especially helpful with Filter Cutoff controls when specific frequencies are required.

GUI Window Sizing

Next to the readout is an option to change the size of the GUI display if you're using a 4k monitor. This is set to SD by default, for standard monitors. **Do not change this setting unless you are on a 4k monitor.** It will increase the GUI size substantially. If you do need to use it, you will need to close and reopen the GUI after selecting 4k for the change to take effect. But if you are not on a 4k monitor, this setting should be left at SD. ***Warning-** Changing this to 4k on a standard sized monitor might cause you to get stuck and not be able to switch back to the standard size without reloading the plugin. If this happens, use your host's fxp/fxb saving function to save your preset so that you can close the plugin and reopen it at the standard size without losing your work. (PulseCode will always open in SD upon each initial load.)

MIDI Learn

Each parameter can be assigned to midi control. This includes all knobs and sliders and most buttons and switches. Midi assignment can be done right from the GUI. Just right-click on a parameter and a pop-up screen will appear. Move the desired control on your Midi controller and it will appear in the Midi CC display. Alternatively, you can click on this display to bring up a list of Midi CCs for manual selection. Click 'Ok' when finished.

MIDI mappings can be saved and recalled per bank. To load and save mappings, click on the Menu switch on the Preset panel to find the MIDI Load/Save options. When saving maps, be sure that they get saved to the 'Presets' folder so they can be pulled up in a list on the plugin's interface when clicking 'Load Midi CC Map'. *NOTE- Mappings are saved with Banks as well as individual Presets. Loading a Bank will overwrite any current Midi Map. Loading a Preset will only overwrite the current Map if loading into slot #1. If you want to load individual presets into a bank and keep the current Midi Map, be sure to choose slots #2-#127. The Midi Learn section also supports NRPN. For more info on MIDI mappings **see this section.**

Parameter Adjustments

For making fine-tune adjustments, hold Ctrl/Cmd while adjusting knobs and sliders to make control movements more precise. Holding Shift+Ctrl/Cmd will slow the control movement even further for ultra fine-tuning.

Also worth noting is the Double-click Reset feature. This can be very handy to reset a control to it's original position for each preset. So lets say you were tweaking the controls of a preset to change a drum sound and then realize that you liked the settings as they were before, simply double-click those controls to bring them back to their original position. **note-** The Reset position for any control is updated each time a preset is switched.

MIDI Learn and MIDI Maps

Each parameter can be assigned to midi control. This includes all knobs and sliders and most buttons and switches. Midi assignment can be done right from the GUI. Just right-click on a parameter and a pop-up screen will appear. Move the desired control on your Midi controller and it will appear in the Midi CC display. Alternatively, you can click on this display to bring up a list of Midi CCs for manual selection. Click 'Ok' when finished. *The Midi Learn section also supports NRPN

MIDI mappings can be saved and recalled per bank. To load and save mappings, click on the Menu switch on the Preset panel to find the MIDI Load/Save options. When saving maps, be sure that they get saved to the 'Presets' folder so they can be pulled up in a list on the plugin's interface when clicking 'Load Midi CC Map'. *NOTE- Mappings are saved with Banks as well as individual Presets. Loading a Bank will overwrite any current Midi Map. Loading a Preset will only overwrite the current Map if loading into slot #1. If you want to load individual presets into a bank and keep the current Midi Map, be sure to choose slots #2-#127.

PulseCode comes supplied with a MIDI Map that is fully mapped out and ready to use. This map sets MIDI cc assignments to several of the most useful controls for live performance and tweaking. To load it, click the 'Menu' button next to the preset display. This will bring up a popup list of options. Click 'Load MIDI Map', and choose 'MIDI Map'. This is the default mapping that is located in the Presets folder. You can modify this mapping or make a new one, saving it in the same location, and it will pull up in this list as well.
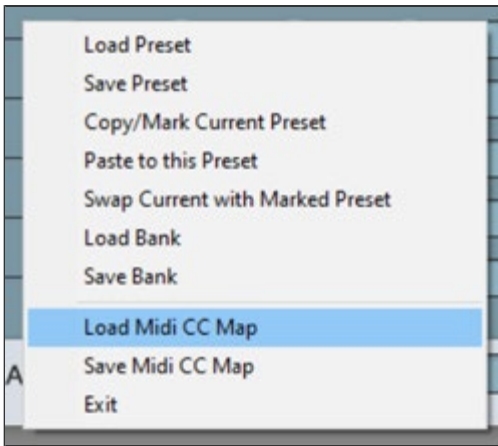
Below are diagrams that will show which MIDI ccs are assigned to which parameters when you load the MIDI Map.

Pattern Panel

This shows the assignments to all of the Mute/Solo buttons and Play button. Note that the Pattern Page Offsets (cc# 23) act as one single control and should be assigned to a slider.
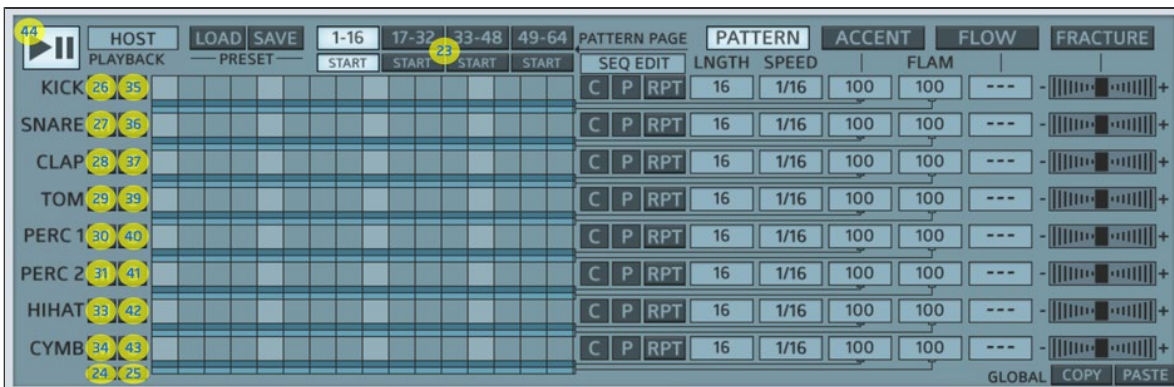

Flow Panel

Flow can be controlled mostly with the Modwheel to Flow feature (on the MIDI panel), but here, controlling the Phase of the Flow can be useful to provide variation to each drum.
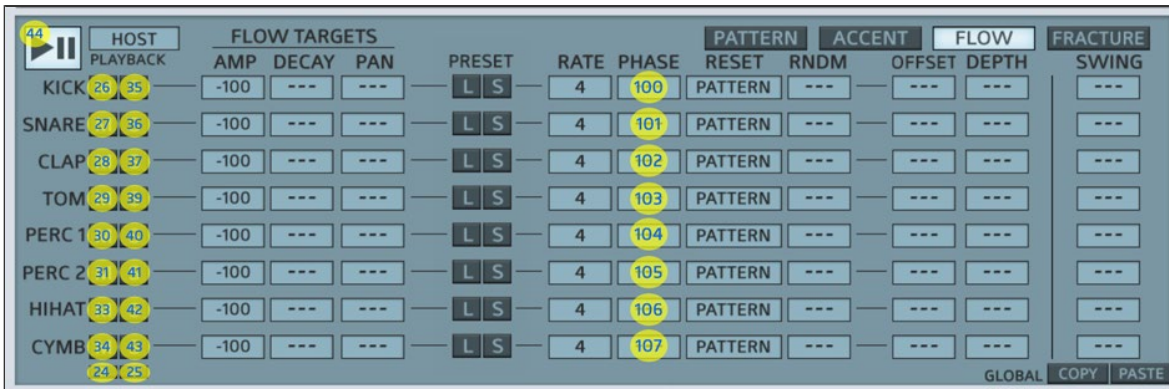
Fracture Panel

All of the Pitch Ranges are assigned to the same MIDI cc (#118). This provides a quick way to reduce the amount of Fracture Pitch if only Steps need to be modified. Pitch Mode can be assigned to buttons. Step Number, when assigned to sliders, can work well in conjunction to using the 'Pitchbend to Fracture' feature.
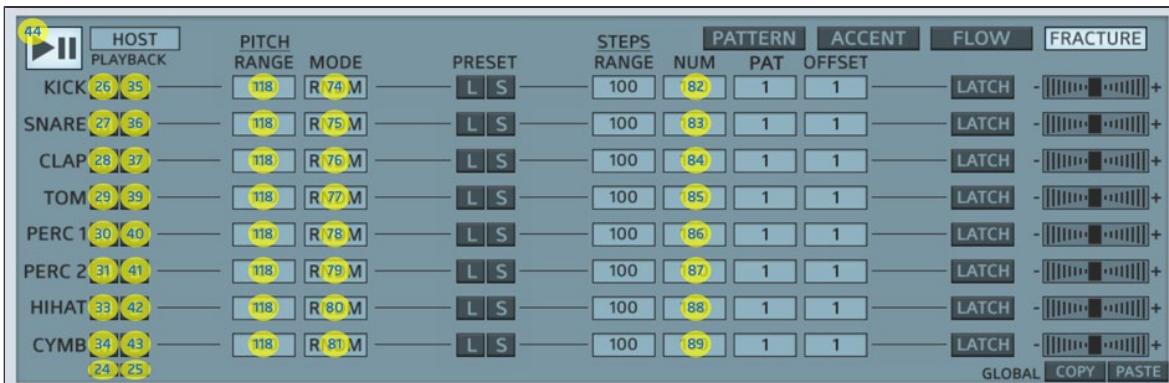

Mixer Panel

This provides control of each drum's volume, as well as Main Volume and Main Pitch.

MIDI Panel

These controls can be very fun when assigned to a group of sliders, especially the Pitchbend to Fracture controls. Try bringing the values of these up individually while moving the Pitchwheel up. This will allow Fracture buildup control for individual drums. Try doing the same while moving the Pitchwheel down, and it can control breakdowns and dropouts of individual drums.

MIDI control of the Drum Fill Arpeggiator controls can be very useful while playing the Fill Arp on your MIDI keyboard.
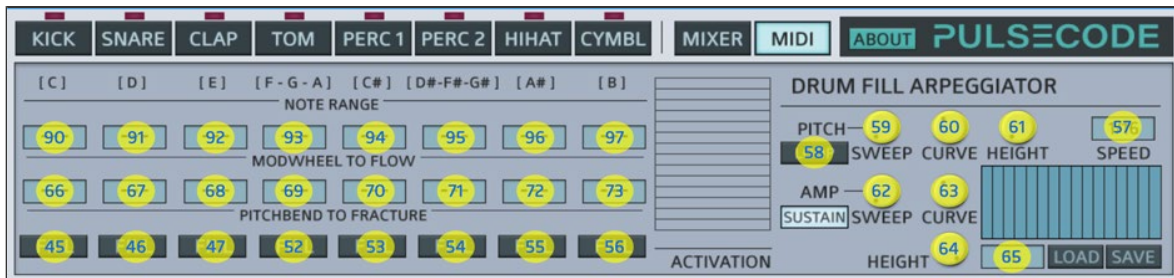
Drum Panels

All of the drum panels have assignments set for LoFi Grit Mix and Air(Reverb) Level. I find this to be most useful, but this can be modified to your liking. As an alternative, try assigning MIDI control to the Decay knobs.

CLAP panel

KICK SNARE **CLAP** TOM PERC 1 PERC 2 HIHAT CYMBL | MIXER MIDI | ABOUT **PULSΞCODE**

◄ ► Crakr1 HIT BODY AIR DIRECT MODE COMPRESSOR

17 LO-FI GRIT→ TUNE | TUNE HPF RES | TUNE BEND | REVERB-NOISE HARD | THRSH RATIO KNEE ATTCK REL GAIN MIX

MAIN PITCH DECAY | ATTCK DECAY LEVEL | DECAY LEVEL | LPF RES GATE | BEND LFO FILTER LPF2

DRUM PRESET LOAD SAVE COPY PASTE | ATTCK DECAY LEVEL 110 | RATE PHASE AM | CUT RES BEND | SAT DRIVE

TOM panel

KICK SNARE CLAP **TOM** PERC 1 PERC 2 HIHAT CYMBL | MIXER MIDI | ABOUT **PULSΞCODE**

◄ ► Busk HIT BODY AIR DIRECT MODE COMPRESSOR

18 LO-FI GRIT→ TUNE | TUNE HPF RES | TUNE BEND | REVERB-NOISE HARD | THRSH RATIO KNEE ATTCK REL GAIN MIX

MAIN PITCH DECAY | ATTCK DECAY LEVEL | DECAY LEVEL | LPF RES GATE | BEND LFO FILTER LPF2

DRUM PRESET LOAD SAVE COPY PASTE | ATTCK DECAY LEVEL 111 | RATE PHASE AM | CUT RES BEND | SAT DRIVE

PERC 1 panel

KICK SNARE CLAP TOM **PERC 1** PERC 2 HIHAT CYMBL | MIXER MIDI | ABOUT **PULSΞCODE**

◄ ► Drum-Cong1 HIT BODY AIR DIRECT MODE COMPRESSOR

19 LO-FI GRIT→ TUNE | TUNE HPF RES | TUNE BEND | REVERB-NOISE HARD | THRSH RATIO KNEE ATTCK REL GAIN MIX

MAIN PITCH DECAY | ATTCK DECAY LEVEL | DECAY LEVEL | LPF RES GATE | BEND LFO FILTER LPF2

DRUM PRESET LOAD SAVE COPY PASTE | ATTCK DECAY LEVEL 114 | RATE PHASE AM | CUT RES BEND | SAT DRIVE

PERC 2 panel

KICK SNARE CLAP TOM PERC 1 **PERC 2** HIHAT CYMBL | MIXER MIDI | ABOUT **PULSΞCODE**

◄ ► Drum-Cong2 HIT BODY AIR DIRECT MODE COMPRESSOR

20 LO-FI GRIT→ TUNE | TUNE HPF RES | TUNE BEND | REVERB-NOISE HARD | THRSH RATIO KNEE ATTCK REL GAIN MIX

MAIN PITCH DECAY | ATTCK DECAY LEVEL | DECAY LEVEL | LPF RES GATE | BEND LFO FILTER LPF2

DRUM PRESET LOAD SAVE COPY PASTE | ATTCK DECAY LEVEL 115 | RATE PHASE AM | CUT RES BEND | SAT DRIVE

HIHAT panel

KICK SNARE CLAP TOM PERC 1 PERC 2 **HIHAT** CYMBL | MIXER MIDI | ABOUT **PULSΞCODE**

◄ ► CH-Nice HIT BODY AIR DIRECT MODE COMPRESSOR

21 LO-FI GRIT→ TUNE | TUNE HPF RES | TUNE BEND | REVERB-NOISE HARD | THRSH RATIO KNEE ATTCK REL GAIN MIX

MAIN PITCH DECAY | ATTCK DECAY LEVEL | DECAY LEVEL | LPF RES GATE | BEND LFO FILTER HPF2

DRUM PRESET LOAD SAVE COPY PASTE | ATTCK DECAY LEVEL 116 | RATE PHASE AM | CUT RES BEND | SAT DRIVE

CYMBL panel

KICK SNARE CLAP TOM PERC 1 PERC 2 HIHAT **CYMBL** | MIXER MIDI | ABOUT **PULSΞCODE**

◄ ► Crash1 HIT BODY AIR DIRECT MODE COMPRESSOR

22 LO-FI GRIT→ TUNE | TUNE HPF RES | TUNE BEND | REVERB-NOISE HARD | THRSH RATIO KNEE ATTCK REL GAIN MIX

MAIN PITCH DECAY | ATTCK DECAY LEVEL | DECAY LEVEL | LPF RES GATE | BEND LFO FILTER HPF2

DRUM PRESET LOAD SAVE COPY PASTE | ATTCK DECAY LEVEL 117 | RATE PHASE AM | CUT RES BEND | SAT DRIVE

Patch Management

PRESET/BANK **MENU** ◀ ▶ Dusty Techno
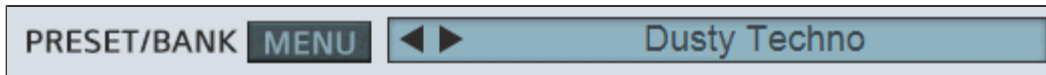
PulseCode's versatile patch management system is very easy to use. Users can load/save their own banks and presets, and even create a default patchbank that loads at startup. Individual presets have copy/paste functions for quickly creating and modifying prototype patches. All of the preset options can be accessed via the **Menu** button, which when clicked, will display a dropdown list of options. Quick access buttons are provided next to this for quickly choosing banks (B) and presets (P). The options available in the main menu are explained in detail below.

Load Preset
Save Preset
Copy/Mark Current Preset
Paste to this Preset
Swap Current with Marked Preset
Load Bank
Save Bank

Load Midi CC Map
Save Midi CC Map
Exit
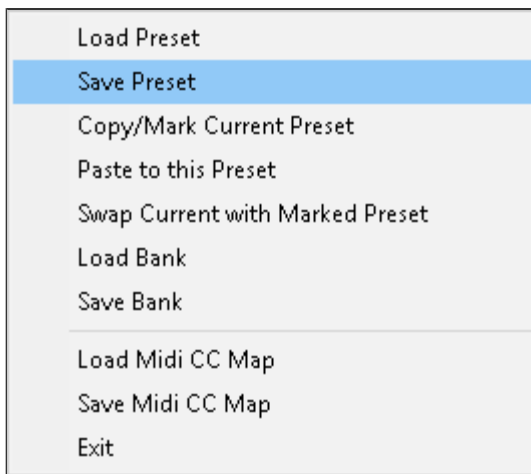
Load Preset: Loads an individual preset into the current slot. If you have any preset files saved to the 'Preset' folder, they will show up in a list when this option is clicked. If the preset is saved to a sub-folder within the Presets folder, the sub-folder will appear in brackets, for example: [Drum Kits]. Presets can also be accessed quickly by clicking on the 'P' button next to the main menu.

Save Preset: Saves an individual preset in it's current state. When this option is clicked, a list will pop up with any presets that are in the 'Preset' folder as well as sub-folders. To overwrite a preset, simply

click on it's name. **Be careful, this will overwrite your preset without warning. Be sure you want to do this. Otherwise, click "Save As" to save it as a new file. Be sure to save to the 'Presets' folder or sub-folders within it.

Copy/Mark Current Preset: Copies the current preset for Pasting into another slot, or Marks it for Swapping with another preset.

Paste to this Preset: Pastes the Copied preset to the current slot.

Swap Current with Marked Preset: Swaps the current preset with the previously Marked preset.

Load Bank: Loads an entire bank of presets. If your banks are in the correct folder (Banks), they will show up in a list when this option is clicked. Alternatively you can click on the 'B' button next to the main menu to quickly bring up your list of Banks.

Save Bank: Saves the entire bank of presets in it's current state. When this option is clicked, a list will pop up with any banks that are in the 'Banks' folder. To overwrite a bank, simply click on it's name. **Be careful!** This will overwrite your bank without warning. Be sure you want to do this. Otherwise, click "Save As" to save it as a new file. Be sure to save to the 'Banks' folder. (Tip- It's always a good idea to make a backup copy of your banks and presets.)

Load Midi CC Map: Loads any saved MIDI mappings into the loaded bank.

Save Midi CC Map: Saves all MIDI mappings for the bank as a file (.mmp). Save these to the 'Presets' folder. *More info about MIDI Maps **here**.

Exit: Exits the dialog box.

The display bar next to the Menu button shows the name of the preset that is currently loaded. Click on this to pull up a full list showing all 128 presets which are categorized by type. Presets within a bank can be browsed via the left/right arrows to the left of the name.

PulseCode will load up it's own internal bank upon startup. The Factory bank supplied with PulseCode is a backup copy of this internal bank. This bank is not meant to be overwritten or modified, but kept as a backup if the original presets are needed. To save your own bank, use the 'Save As' function. It is possible to create a personalized Default bank that will load up automatically in place of the internal bank. To do this, follow the step-by-step below.

Customizing the startup bank (creating a Default Bank)

1.) Modify the internal bank to your liking

2.) Click the Menu button and choose 'Save Bank'

3.) A popup will appear

4.) Choose 'File Selector (Save As)...'

5.) Within the 'Banks' folder, save your bank as 'Default'

6.) Now, each time PulseCode is loaded, the Default bank you created will load up with it.

Anytime you make changes to this bank that you want to save, click the Menu button and choose 'Save Bank', then click the bank you want to overwrite. In this case, Default. **Warning!-** Overwriting a bank is not undoable. You will lose any previously saved presets by replacing them with the one you are overwriting with. Be sure you want to do this first.

Presets can be copied from one bank to another, so if you're unhappy with a preset you've overwritten in your Default (startup) bank, you can

copy/paste the original preset back from the Factory (backup) bank.

*Tip: It's a good idea to make backups of any banks you are working on, just in case you accidently overwrite something you didn't mean to.

In order for the bank/preset system to function properly, banks and presets should be saved in their corresponding folders, which can be found in the following location:

Windows: the folders are located in **C:/Users/Public/Public Documents/PulseCode/**.

Mac: the folders are located in **Users/Shared/PulseCode/**.

*NOTE- Bank files should always be saved to the '**Banks**' folder. Presets, Sub-Presets and Midi Maps should always be saved to the '**Presets**' folder. This will ensure that they can be pulled up in a list on the plugin's interface.

Saving individual presets will work with the same procedure above, by choosing 'Save Preset' in the Menu.

Creating and Modifying Prototype Presets

Within the internal bank supplied with PulseCode, you will find a group of Template presets that are designed as starting points (presets #112-128). These might make it a little easier for specific tasks.

Prototype patches can be created using the copy/paste functions, which allow you to copy one preset to another location within the bank or between banks. For example, if you wanted to make several variations of a particular preset, you could create a prototype patch, copy it, then paste it as many times as needed and go on to modify each one as desired.

Another way to work with Prototypes is by saving them into the Presets folder outside of your Bank. This way they are always available by simply pressing the 'P' button.

A useful feature that may come in handy is being able to double-click each control to reset it to it's original position for each preset. So lets say

you were tweaking the controls of a preset to change a drum sound and then realized that you liked the settings as they were before, simply double-click the controls to bring them back to their original position.

Aside from saving presets and banks for the entire instrument, certain sections have the ability to save and load sub-presets. These are presets for small groups of parameters for specific sections of the plugin. Sub-Presets are covered in more detail in the next section below.

Sub Presets

Sub-Presets are a way to save and recall specific groups of controls within the plugin. This applies to all of the Drum Editors, the Pattern Sequencer, the Drum Fill Arpeggiator, each Flow lane and each Fracture lane. Sub-Presets should be saved into the proper locations in order to function correctly. Saving to the proper location ensures that your presets will be pulled up in a list directly from the plugin's interface. These locations are as follows:

Drum Presets: PulseCode/Presets/*drum type*/

Patterns: PulseCode/Patterns/

Flow Presets: PulseCode/Presets/Flow/

Fracture Presets: PulseCode/Presets/Fracture/

Fill Arp Presets: PulseCode/Presets/

Sub-Presets work differently for each section, so here's a brief rundown.

Drums

Drum Sub-Presets include all the control settings on the Drum Engine's panel, including the chosen Element.

Click the **Load** button to pull up all of your existing presets for that drum. If you want to load a preset from a different drum, use the 'File Selector' to navigate to the folder with the preset you wish to load. This allows you to load different types of drums. For example, loading a Tom drum on a Perc Engine if you wanted two different Toms.

To save your presets, click the **Save** button. If you wish to save your

preset as a new file, choose 'File Selector (Save As...)', otherwise you can overwrite an existing preset by simply clicking on it from within the Save menu. **Warning: This will overwrite your preset without warning. Be sure you want to do this before proceeding.

Copy and Paste buttons are provided next to the Load/Save buttons, allowing you to copy the settings of a Drum Editor panel and paste elsewhere. When Copy/Paste is used, Elements are not transferred, only the parameter settings. So, for example, if you had a punchy kick and you wanted to apply the same character to your snare, just use copy/paste. It will apply all the control settings without changing the Drum Element.

Patterns

The Pattern Sequencer's Load/Save buttons are located directly above the Pattern Grid. They operate exactly as described above. Saving Patterns will only copy the sequencer steps, accents and flams. No other controls are saved. Be sure to save your patterns into the 'Patterns' folder so they can be pulled up in a list on the interface.

If you want to copy the entire Sequencer panel onto another preset, there is a Global Copy/Paste function located in the bottom right corner of the Sequencer panel. These buttons copy and paste all the settings on the Pattern, Accent, Flow and Fracture panels. (*Warning: If you paste into any preset, you will lose that preset's settings for these controls, so be sure you want to do this.) If you only want to load patterns into a preset without affecting your Accent, Flow and Fracture settings, use the Load/Save functions, and only the Pattern Grid will be modified.

Flow and Fracture

Flow and Fracture both use their own sub-presets. These presets will save all of the controls for a given drum's lane on that panel. For example, a Fracture preset for the Kick drum will load/save all of the controls on the Kick row of the Fracture panel. This preset can then load on any of the other drum rows. This works the same way for the Flow panel. The Load/Save buttons are located in a column in the center of each of the panels.

Drum Fills

The Drum Fill Arpeggiator can Load/Save it's own Sub-Presets as well. The load/save buttons are located directly beneath it's Velocity Sequencer, and it will save all of the Fill Arpeggiatror's settings and parameters. These presets are saved directly into the Presets folder. ***Note-** Sub folders are now supported, so if you wanted to save different types of presets (Rolls, Fills, Arps, etc.), just create a folder for these in the proper location (in this case the Presets folder). Sub folders will only show up if there is content within them. When you have your sub folders in place, it will show up within brackets in the popup list, for example: [Drum Rolls]. Click on the name in brackets to enter the sub folder and choose your preset.

Element Types

Here's a closer look at the different types of Elements supplied with PulseCode.

Kicks

The Kick Drums are mostly sourced from acoustic sounds with a few electronic exceptions. Although many of the kicks are so heavily processed, the line between acoustic and electronic is quite blurred. The Kicks all have similar Hit layers, which are very short transient 'clicks'. The Hits were pitched up before being sampled and recorded back at a lower octave, then pitched back to the original octave. What this does is pick up some extra grit that can be heard on the lower pitches in the sampler, bringing that character to the original pitch. The result is a nice crunchy top-end. The Kick's Body layer is a sub-bass ranging from around 50-100hz. The Reverb is short and roomy. The Noise layer goes for a shorter, snappy sound that compliments the Kick.

Snares

Like the Kick Elements, the Snares are mostly acoustic and heavily processed. The Snare Hits are very snappy and almost clap-like, designed specifically for giving the drum that extra 'crack'. These hits are based on the Core sample, providing a more natural sound for each drum. The Snare Body layers sit around the 200hz range for bringing out extra 'punch'. The Reverb is much longer than the Kick, and the Noise is a full burst which allows for longer gated sounds.

Claps

The Claps are very similar to the Snares, the Hits use the same concept, extra crack and smack. The Clap's Body is simply a lower pitch version of the Core. This acts as a sub-oscillator for beefing up the overall sound. The Noise layer is short and snappy, which compliments the character of the Clap.

Toms

The Tom drum's Hit layers are closer to a soft hihat type sound, which compliments the Tom. Like the Kicks, the Toms use a bass sound for the body layer for getting a bigger, deeper Tom drum. However, these Body layers are based on the Core sample for a more natural sound, so the frequency can range differently depending on the drum. Here, the noise layer is short and snappy. The Reverb is long and ready to be gated.

Bass

There are a few Bass sounds included that can be loaded up on the Perc drums. Most of these are recorded from old dusty FM synths and given the PulseCode treatment with suitable layering. For these and other percussive synth sounds, I chose a Hit layer based on the Core sample, pitched up an octave and aggressively compressed to bring about a noticeable transient. The Body layers are typically a lower octave of the Core, like a sub-oscillator. The Reverb has been given some pre-EQ treatment for less rumble and a smoother sound.

Drum Percussion

The Hit layers for these are typically short, hihat-like noise bursts. However for some types of drum's a stick-like sound was more suitable. For the more lower-end sounds, a bass layer is used for the Body, but for bells, tambourines, etc., a duplicate of the Core to act as sub-oscillator was necessary. Most of these use a longer Reverb setting and a short, snappy Noise layer.

FX Percussion

These required some creativity in terms of layering. They are all very different and usually act as percussive synth sounds.

HiHats

The Hihats consist of some Open and some Closed hihat sounds. Closed HiHats might seem redundant if they cannot be opened up, but there's a secret within the Noise layer. The Noise is actually an sizzly synthetic open hihat that can be used as a closed hat extender. The Reverbs here are very short room-style reverbs.

Cymbals

These consist of a few types: Crash, China, Rides, etc. All of these use much longer reverb and noise for extending the sound and creating ambience. Try using cymbals at very low pitches for nice atmospheric washes.

Orchestra Hits

These have been included in the Cymbals folder, assuming they might be used in a similar way as a crash cymbal. The Hit layers for these Orchs are tambourines for providing a higher frequency top-end. The Body is a kick drum for providing a nice thud to the sound. A long reverb is used for atmosphere. The Noise layer for these are actually crash cymbals which compliment and enhance these sounds naturally.

Credits

Concept, Design and GUI by Jack Resweber **(Psychic Modulation)**

Programmed by **Chris Kerry**

VST Plugin Technology by Steinberg

Support Information

Email: **support@psychicmodulation.com**

Visit the official KVR support forum