USER MANUAL

_PROPHET-VS V

ARTURIA

_The sound explorers

Special Thanks

DIRECTION

Frédéric Brun
Kevin Molcard

DEVELOPMENT

Jari Kleimola
Baptiste Le Goff
Baptiste Aubry
Mathieu Nocenti
Raynald Dantigny
Marie Pauli
Alexandre Adam
Corentin Comte
Samuel Limier
Fanny Roche
Rasmus Kürstein
Kevin Arcas
Alessandro De Cecco
Hugo Caracalla
Mauro De Bari
Geoffrey Gormond
Marius Lasfargue
Marc Antigny
Pierre-Lin Laneyrie
Yann Burrer
Loris De Marco
Cyril Lepinette
Patrick Perea
Stéphane Albanese
Pascal Douillard
Christophe Luong
Pierre Mazurier

DESIGN

Callum Magill (lead)
Edouard Madeuf
Pierre Pfister
Maxence Berthiot
Florian Rameau
Shaun Ellwood
Morgan Perrier
Heloise Noir

SOUND DESIGN

Lily Jordy (lead)
Jean-Michel Blanchet
Quentin Feuillard
Maxime Audfray
Florian Marin
Andrea De Paoli
Gustao Bravetti
Klaus Baetz
Solidtrax
Sonar Traffic
Victor Morello

TESTING

Germain Marzin (lead)
Arnaud Barbier
Matthieu Bosshardt
Aurélien Mortha
Julien Viannenc
Roger Schumann
Thomas Barbier
Adrien Soyer
Bastien Hervieux
Enrique Vela
Benjamin Renard
Nicolas Stermann

MANUAL

Stephen Fortner
Jimmy Michon

BETA TESTING

Gary Morgan
George Ware
Marco Koshdukai Correia
Mat Herbert
Luis Rodriguez
T.J. Trifeletti
Fernando Manuel Rodrigues
Chuck Zwicky
Andrew MacAulay
Davide Pudexxu
Bernd Waldstädt
Bastian Barth
Stephen Wey
Terry Marsden
Jay Janseen
Gustavo Bravetti

26 avenue Jean Kuntzmann
38330 Montbonnot-Saint-Martin
FRANCE
www.arturia.com

Product version: 1.0.0

Revision date: 10 May 2022

Special Messages

This manual covers how to use Prophet-VS V, provides a comprehensive look at its features, and details how to download and activate it. First, some important messages:

Specifications Subject to Change:

The information contained in this manual is correct at the time of printing. However, Arturia reserves the right to change or modify any of the specifications or features without notice or obligation.

IMPORTANT:

The software, when used in combination with an amplifier, headphones or speakers, may be able to produce sound levels that could cause permanent hearing loss. DO NOT operate for long periods of time at a high volume or at a level that is uncomfortable.

If you encounter any hearing loss or ringing in your ears, please consult an audiologist.

NOTICE:

Service charges incurred due to lack of knowledge relating to how a function or a feature works (when the software is operating as designed) are not covered by the manufacturer's warranty, and are therefore the owner's responsibility. Please study this manual carefully and consult your dealer before requesting additional support.

Table Of Contents

1. WELCOME TO PROPHET-VS V!

Thank you for your purchase of Prophet-VS V by Arturia. It is a loving recreation of the classic Prophet-VS vector synthesizer, employing our exclusive TAE® (True Analog Modeling) technology. Far beyond taking digital snapshots of a classic instrument's sound, TAE analyzes and recreates analog circuits of classic hardware instruments. Now, talking about *analog* modeling is a bit of a misnomer in the case of the Prophet-VS, which was a *digital* synthesizer. The point is, we didn't just sample it. We got our hands on the real thing, analyzed how every circuit behaved, and reverse-engineered it from the assembly code up so that you could have a hard-to-find classic synth as close at hand as a click of your mouse.

1.1. About the Prophet-VS

The Prophet-VS was manufactured by Sequential Circuits, the same company whose founder Dave Smith gave us the first fully programmable polyphonic analog synthesizer, the Prophet-5. Despite the ongoing popularity of the analog Prophet-5, by 1985, the temporal center of a decade in which the keyboard industry was infatuated with all things digital, it was time to say, "And now for something completely different."

Prophet-VS synthesizer

The Prophet-VS pioneered *vector synthesis*, which is a relative of wavetable synthesis although it works somewhat differently. It featured four digital oscillators, each of which could create a plethora of digital waveforms – anything from duplicates of traditional analog waveforms such as sine and sawtooth to extremely complex harmonic patterns. The player could morph between these waveforms using a joystick or a mixer envelope which, in effect, automated the joystick. Thus, you could achieve far more sophisticated harmonic variations than what were possible in traditional subtractive synthesis. Within a single patch, musical moves such as cross-fading from an analog-like synth brass into the audio equivalent of Superman's snowy fortress full of sparkling crystals, were no problem.

Then, if you placed an "invisible hand" on the joystick using a modulation source such as an envelope generator, you achieved sonic variation not possible by simply sweeping the filter cutoff and resonance knobs on a conventional analog synthesizer. The top center, bottom center, left center, and right center joystick positions represented the sound of just one of the oscillators, but any other position was a mix. A move between two joystick positions – either by a human or digital hand – was a "vector." Hence, vector synthesis.

The original Prophet-VS had eight voices (with four oscillators per voice) and was two-part multi-timbral. The voices were mixed into a four-pole (24dB-per-octave) analog filter. It also featured five-stage envelopes for volume, the filter, and the all-important mix between the four oscillators.

Inventor Dave Smith would rack up many further accomplishments, most famously as the primary designer of MIDI, the language all music hardware and software uses to communicate to this day. He designed the first commercially available software synthesizer, Seer Systems Reality, released in 1997. He developed the beloved Wavestation wave-sequencing synth for Korg – an instrument that would not have existed without the research and development that went into the Prophet-VS. In 2002, he formed Dave Smith Instruments and started manufacturing his own hardware synths, beginning with the Evolver desktop hybrid synth. In 2013, he was awarded a Technical Grammy for MIDI and his lifetime of achievements in music. Then in 2018, Smith regained the rights to use the Sequential name and continues to bring new analog and digital-analog hybrid synths to market.

1.2. Arturia's Secret Ingredient: TAE®

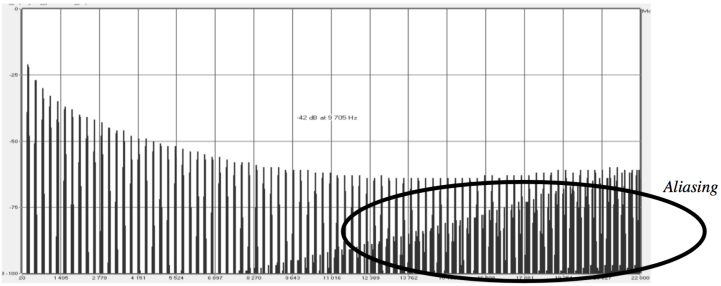
TAE® (True Analog Emulation) is Arturia's technology for emulating the circuits used in classic synthesizers. TAE's software algorithms result in spot-on emulation of the original hardware. This is why Prophet-VS V offers an unparalleled quality of sound, as do all of Arturia's virtual instruments.

TAE combines major advances in several domains of synthesis:

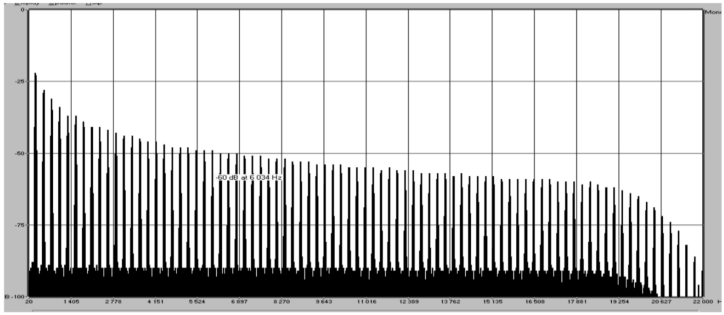
1.2.1. Aliasing-Free Oscillators

Standard digital synthesizers produce aliasing in high frequencies, especially when using Pulse Width Modulation (PWM) or Frequency Modulation (FM).

TAE enables the creation of oscillators that are completely free of aliasing in all contexts and behaviors such as PWM, FM, and more.



Linear frequency spectrum of a current well-known software synthesizer

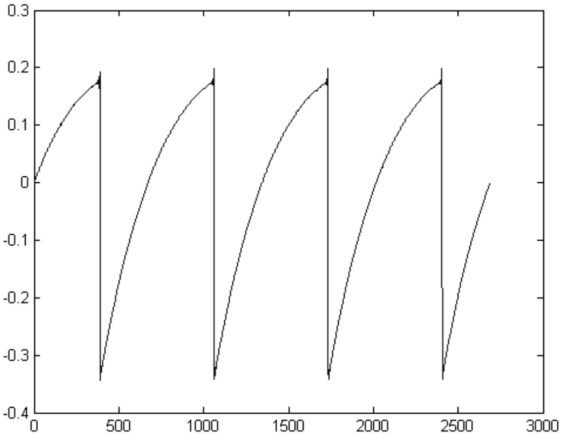


Linear frequency spectrum of an oscillator modeled with TAE®

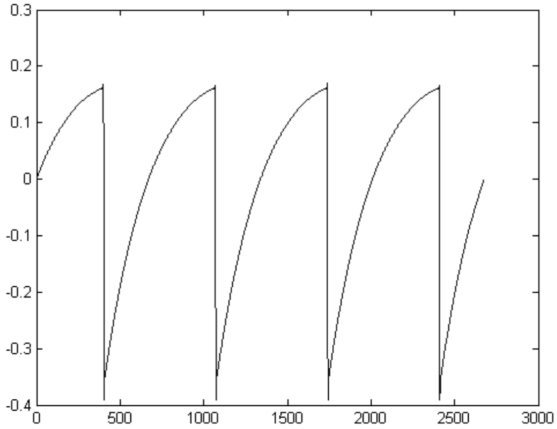
1.2.2. A Better Reproduction of Oscillator Waveforms

The waveforms produced by the oscillators in vintage synthesizers are affected by the presence of a capacitor in the circuits. The discharge of such capacitors results in a slight "bend" in the original waveform (most notably for sawtooth, triangle, and square waveforms). TAE® reproduces the result of this capacitor discharge in software.

Directly below is a plot of a waveform from one of the hardware instruments that Arturia has emulated, followed by one generated by Arturia's TAE. As you can see, the waveforms are quite similar and both are equally deformed by the lowpass and highpass filtering.



Temporal representation of the sawtooth waveform of a hardware synthesizer



Temporal representation of a sawtooth waveform reproduced by TAE®

1.2.3. Voice Dispersion Feature

Oscillators in vintage hardware were often unstable in their operation. Their waveforms differed slightly from one period to another and the starting point for each period could vary due to changes in temperature and other environmental conditions. So could the pitch and other aspects of the sound. These stability "problems" were, in fact, largely responsible for the sound of many synthesizers! Prophet-VS V includes adjustable *Voice Dispersion* to give you precise control over the variation in cutoff, resonance, pitch, and amp levels of each individual voice.

1.3. Prophet-VS V Features

It wouldn't be an Arturia instrument if we didn't combine the best of modeled hardware with the conveniences only possible with modern software. Here is a list of Prophet-VS V's main features.

- All sections of Prophet-VS main panel lovingly recreated.
- Four oscillators with 94 original Prophet-VS waveforms, plus coarse and fine tuning.
- 450 additional waveforms per oscillator, including granular synthesis waveforms, FM, analog-style, and hybrids.
- Ability to import user samples as waveforms for each oscillator.
- Up to 16 voices of polyphony.
- Unison mode stacks voices for absolutely huge sounds.
- Two LFOs as on original Prophet-VS, with tempo sync.
- Filter and amp envelopes with original 5-stage, multi-segment, and DADSR modes.
- Oscillator mixer envelope with tempo sync.
- Advanced function generators let you assign custom modulation shapes to multiple destinations.
- Integrated arpeggiator based on the original Prophet-VS.
- Three effects slots, each with a choice of 16 studio-quality effects.
- Full DAW automation of virtually all parameters.
- Tempo-sync of all appropriate time-based settings (e.g. LFO rates).
- Support for MPE (MIDI Polyphonic Expression).
- Searchable Preset Browser with user-creatable Playlists.

2. ACTIVATION AND SETUP

2.1. Register and Activate

Prophet-VS V works on computers equipped with Windows 8.1 or later, and macOS 10.13 or later. You can play it in standalone mode or use it as a plug-in instrument in Audio Units, AAX, VST2, or VST3 format.

Once you install Prophet-VS V, the next step is to register the software. This is a simple process that involves a different software program, Arturia Software Center.

2.1.1. Arturia Software Center (ASC)

If you haven't installed ASC yet, please go to this webpage: Arturia Downloads & Manuals.

Look for the Arturia Software Center near the top of the page, and then download the installer version for the system you're using (Windows or macOS).

After you complete the installation instructions, proceed to do the following:

- Launch the Arturia Software Center (ASC).
- Log into your Arturia account.
- Scroll down to the 'My Products' section of ASC.
- Click on the *Activate* button next to the software you want to start using (in this case, Prophet-VS V).

It's as simple as that!

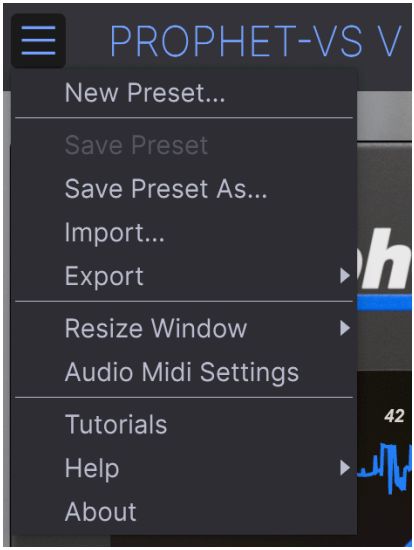
2.2. Initial Setup for Stand-Alone Use

If you would like to use Prophet-VS V in stand-alone mode, you will need to set up the software and ensure that MIDI and audio signals are flowing through it properly. You only need to do this once unless you'd make some major changes to your computer. The setup process is largely the same on both Windows and macOS computers but for the sake of clarity, we'll cover each system separately.

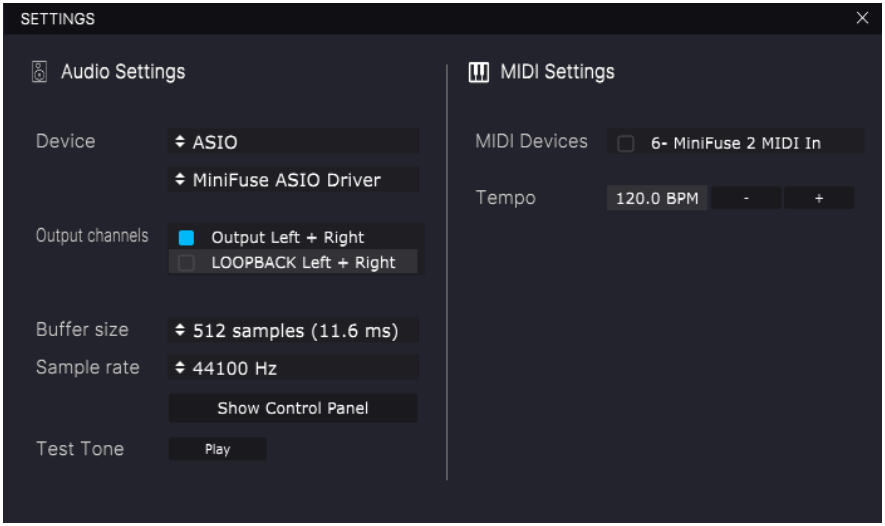
> ! This section only applies to readers that plan to use Prophet-VS V in stand-alone mode. If you are only going to use the software as a plug-in within a host music software, you can jump to the end of this chapter - Using Prophet-VS V in plug-in mode [p.12] - as your host music software will handle these things automatically.

2.2.1. Windows Users: Audio and MIDI settings

At the top left of Prophet-VS V's upper toolbar, you'll find a "hamburger" icon that opens up the main drop-down menu. This contains various setup options. Go to **Audio MIDI Settings** to set up how the audio and MIDI signals behave.



This option works in the same way on both Windows and macOS X, although the names of the devices available to you will depend on the hardware that you are using.



Starting from the top, you'll have the following options:

- **Device** selects which audio driver and device will handle the playback of Prophet-VS V. This can be your computer's internal driver, like Windows Audio or ASIO, or CoreAudio in Mac devices. Depending on your selection, the name of your hardware interface may appear in the field below.

- Using the second bar under **Device** lets you select the **output channels**, which means choosing which of the available outputs will be used to route your audio out. If your selected device has only two outputs, then only two options will appear here. If your device has more than two outputs, then you can select a specific pair of outputs.

- The **Buffer Size** gives you the option to choose the size of the audio buffer your computer uses to calculate sound.

> ♪ A larger buffer means a lower CPU load as the computer has fewer interruptions and longer amount of time to process commands. However, this can result in longer latency (reaction time) between pressing a key and hearing the sound it's supposed to produce, which creates a considerable problem when wanting to play an instrument smoothly. On the contrary, a smaller buffer means lower latency between pressing a key and hearing the note but a higher strain on your CPU.

  A fast, modern computer should be easily able to operate at low sample buffer sizes (such as 256 or 128) without audio glitches. However, if you do hear clicks, pops or other audio disruptions, try increasing the buffer size until you reach smooth playback without any glitches. The latency time is displayed in milliseconds on the right-hand side of this menu.

- The **Sample Rate** menu lets you set the sample rate at which audio is sent out of the instrument. The options listed here will depend on the capability of your audio interface hardware.

> ♪ Virtually, all audio hardware can operate at 44.1 or 48 kHz which is perfectly fine in most applications, including Prophet-VS V. Higher sample rates place greater loads on the CPU so we recommend staying at 44.1 or 48 kHz unless you have a specific requirements to work at high sample rates.

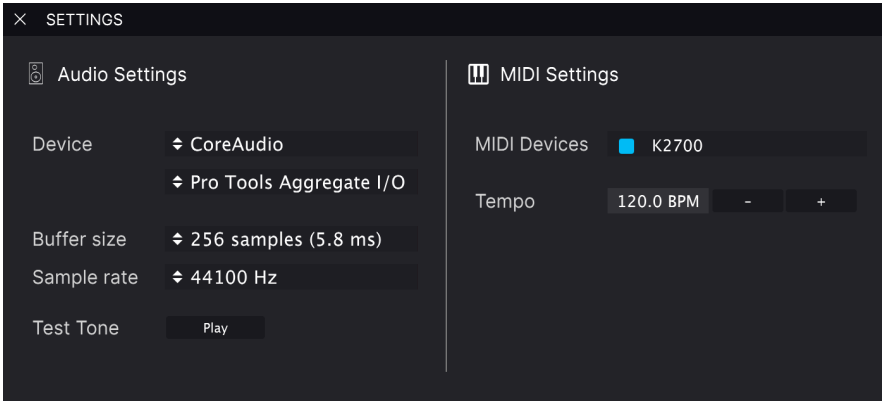
- **Test Tone** plays a simple test tone to help you troubleshoot any audio issues. You can use this feature to confirm if the instrument is routed correctly through your audio interface and whether audio is playing back to where you expect to hear it (your speakers or headphones, for example).

- Your connected MIDI devices will appear in the **MIDI Settings** area. Note that this is only displayed if MIDI devices are present on your computer. Click the check box to accept MIDI data from the device you want to use to trigger the instrument. Note that you can select more than one MIDI device if you wish to play Prophet-VS V from multiple controllers.

- **Tempo** lets you set the tempo of the Prophet-VS V sequencer. When using Prophet-VS V within a host music software as a plugin, the virtual instrument gets tempo information from your host software.

2.2.2. macOS Users: Audio and MIDI settings

The process of setting up Audio and MIDI settings in a macOS system is overwhelmingly similar to setting them up in Windows (described above), and the menu is accessed in an identical way. The only difference here in macOS is that OS X uses CoreAudio to handle audio routing, and within that, your audio device will be available in the *second* drop-down menu.



2.2.3. Using Prophet-VS V in Plug-In Mode

Prophet-VS V comes in VST, AU and AAX plug-in formats for use in all major digital audio workstation (DAW) host software, such as Cubase, Logic Pro, Pro Tools, Ableton Live, and more. You can load it as a plug-in instrument and its interface and settings will work in the same way as in stand-alone mode, with a few small differences:

- The instrument will now sync to your DAW's host tempo.
- You can automate numerous parameters using your DAW's automation system.
- You can use more than one instance of Prophet-VS V in a DAW project (in stand-alone mode you can only run one instance of Prophet-VS V).
- You can route Prophet-VS V's audio outputs more creatively inside your DAW using the DAW's own audio routing system.

Now that you've set up your software, it's time to play!

3. THE USER INTERFACE

In this chapter we'll start with an overview of the Prophet-VS V user interface. This will give you an idea of how the instrument is organized and where to find things. We'll dive deeper into the main synth panel in Chapter 5 – Main Synth Panel [p.49].

3.1. High-Level Overview

Prophet-VS V is subdivided into four sections, three of which are annotated in the image above.

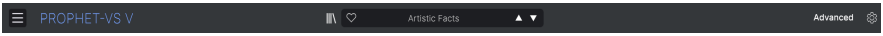
1. **The Upper Toolbar** [p.14] This is where you handle administrative tasks such as saving, loading and browsing presets, editing various setup and configuration parameters, accessing the Preset Browser [p.32], and accessing other advanced features of Prophet-VS V.

2. **The Main Synth Panel:** [p.49] Here is where you will likely spend most of your time in Prophet-VS V. It contains a detailed reproduction of the Prophet-VS panel, plus a few of our own features. We will go over this panel in the Main Synth Panel [p.49] chapter.

3. **The Lower Toolbar:** [p.19] This section provides quick access to a number of important parameters such as CPU usage, polyphony, edit history with undo/redo, and Macro controls. Its left side also shows pop-up names for any control over which you move the mouse.

4. **The Side Panel:** [p.22] Accessed by clicking the gear icon at upper right, this panel contains MIDI and MPE settings, MIDI control assignments, Macro assignments, and tutorials. (It's not shown in the image above for reasons of neatness on the page.)

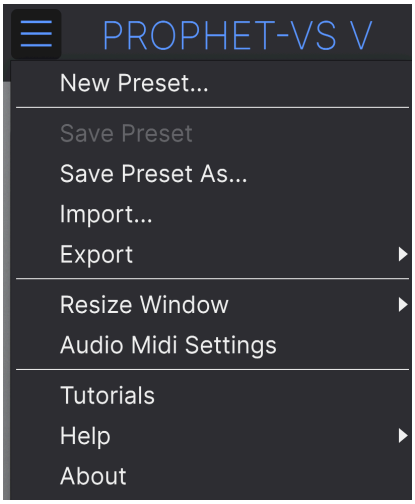
3.2. The Upper Toolbar



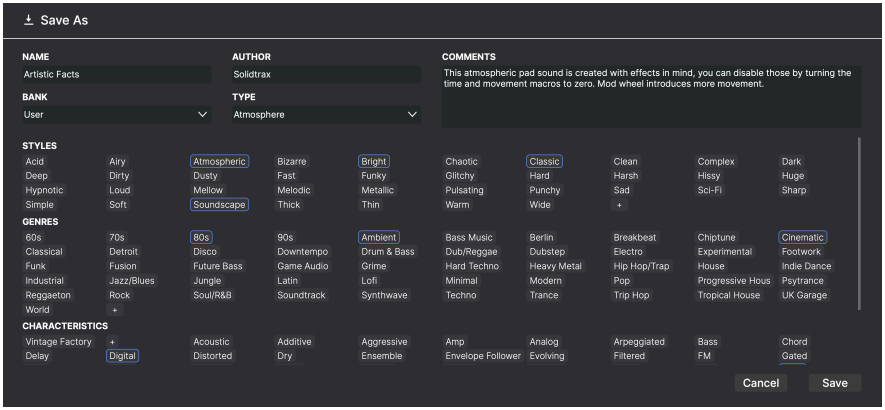
The toolbar that runs along the top of the window provides access to many useful features including the Prophet-VS V menu, preset browsing, access to Prophet-VS V's Advanced mode, and important settings in the Side Panel [p.22]. This section will go over them from left to right.

3.2.1. Main Menu

Clicking the "hamburger" (three horizontal lines) icon at the top left corner opens a pull-down menu and lets you access many important features.



- **New Preset:** Creates a new Preset with default settings on all parameters. It is a good place to start if you would like to create a new sound from scratch.
- **Save Preset:** Overwrites the currently loaded Preset with any changes you have made. This is disabled on factory presets. To edit a factory Preset, first use the "Save Preset As" option.
- **Save Preset As** Saves your Preset under a different name. Clicking this option reveals a window where you can name your Preset and enter information about it.



♪ You can enter the Author's name, select a Bank, and specify tags: Types, Styles, and Characteristics. This becomes very useful for later searching in the Preset Browser [p.32]. You can even enter freeform text in the Comments field, which is handy for providing a more detailed description.

- **Import:** Imports a file – either a single Preset or an entire Bank – from your computer. File names have the extension "pvsx."
- **Export:** You can export Presets in two ways: as a single Preset or as a Bank.
    - Export Preset: Exporting a single preset is handy when for sharing a Preset with someone else. The default path to these files will appear in the "save" window, but you can create a folder at another location if you like. The saved preset can be reloaded using the *Import* menu option.
    - Export Bank: This option can be used to export an entire bank of sounds from the instrument, which is useful for backing up or sharing Presets. Saved banks can likewise be reloaded using *Import*.
- **Resize Window:** The Prophet-VS V window can be resized from 50% to 200% of its original size without any visual artifacts. On a smaller screen such as a laptop you may wish to reduce the interface size so it doesn't dominate the display. On a larger screen or a second monitor you can increase the size to get a better view of the controls.

♪ You can also use the keyboard shortcuts Ctrl & +/- (or Cmd & +/-) to quickly adjust the window size. Note that in some DAWs, the same key commands may be used for zoom. In this case, the DAW takes priority.

- **Audio Settings (stand-alone mode only):** Here you manage the way the instrument transmits audio and receives MIDI. See Chapter 2 [p.9] for more information.

When using Prophet-VS V as a plug-in, the host software handles all of the parameters in this menu including audio and MIDI inputs and outputs, buffer size settings, and the like.

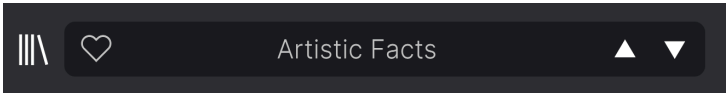
- **Tutorials:** Prophet-VS V comes with interactive, in-app tutorials that walk you through different features of the instrument. Select one of the tutorial chapters to get step-by-step descriptions of how to make the most of Prophet-VS V.

- **Help:** Provides links to the Prophet-VS User Manual and online FAQ.

- **About:** Here you can view the Prophet-VS V software version and "movie credits" of everyone involved in its development. Click the About window again (or anywhere on the interface) to close it.

3.2.2. Preset Toolbar Area

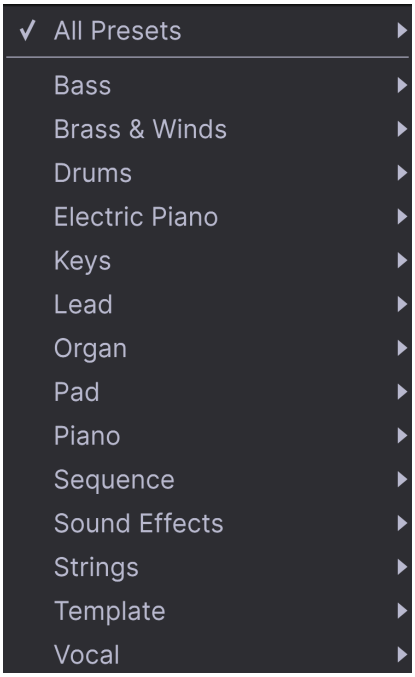
Prophet-VS V comes packed with lots of great-sounding factory Presets and we hope you'll create many more of your own. We have a Preset Browser powerful enough to deserve its own chapter [p.32]. Here, though, are the main tools needed for quickly selecting Presets.



The browsing features of the Preset Toolbar include the following:

1. The |||\ **Preset Browser Button** opens and closes the Preset Browser.

2. The **Preset Name** is listed next in the toolbar. Clicking on the name reveals a pull-down menu with other available presets. Click on any name to load that preset or click away from the menu to close it.



3. The **Preset Filter** drops down when you click the main Preset name field. Set to *All Types* as shown above, it covers every Preset in the current bank. Set to a different option, it limits Preset selection to sounds of a certain Type.

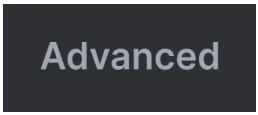
> ♪ That's Type with a capital T because Types are a specific tag in the Preset Browser and the categories shown here correspond to them.

4. The **Arrows** select the previous or next preset in the filtered list. This is the same as clicking on the preset name and selecting the next option in the list, but does it with only one click.

> ♪ The Previous and Next arrows can be MIDI mapped so you can use buttons on your MIDI Controller to step through Presets. ♪ Which Presets the Arrows step through my be further delimited by search criteria you have entered in the Preset Browser [p.32].

3.2.3. Advanced Panel Button

Prophet-VS V faithfully emulates the original Prophet-VS hardware, but does so much more. This includes offering extended modulation sources and routings, plus three effects slots with a choice of 16 studio-grade effects for each. Access these features by clicking the **Advanced** button.



These features are covered in two upcoming chapters: Advanced Modulations [p.79] and Effects [p.86].

3.2.4. Gear Icon

At the far right of the Toolbar, a gear-shaped icon opens up a panel on the right side, containing four tabs:

- **Settings:** Includes MIDI receive channel and settings relevant to MPE (MIDI Polyphonic Expression) behavior.
- **MIDI:** Handles all assignments of hardware MIDI controls.
- **Macro**: Assignments for four Macros that control multiple parameters with a single knob twist. These knobs are available in the Lower Toolbar.
- **Tutorials:** In-app interactive tutorials, also accessed from the main menu.

More details are in the Side Panel [p.22] section below.

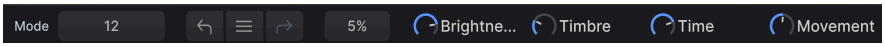
3.3. The Lower Toolbar

The Lower Toolbar runs along the bottom of the Prophet-VS V user interface and provides quick access to several important parameters.

3.3.1. Left Side

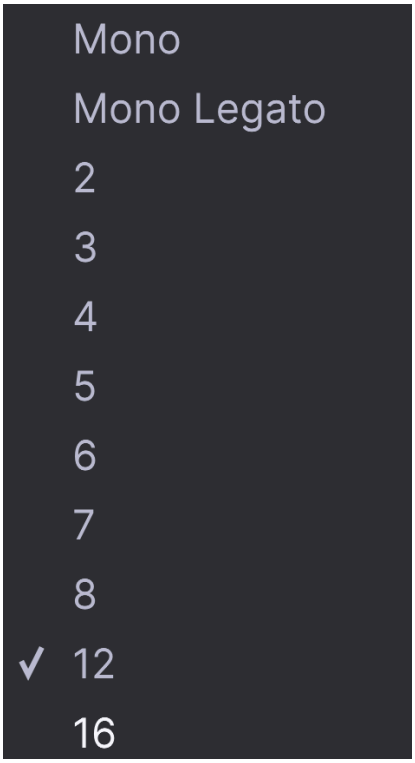
Hover the mouse over any control, and the left side of the Lower Toolbar displays a description of the parameter name you're about to adjust.

3.3.2. Right Side



On the right side are several more useful settings.

3.3.2.1. Polyphony

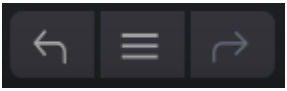


This menu sets the polyphony limit of Prophet-VS V, which can help reduce CPU usage on older computers. Note that Prophet-VS V can go up to 16 voices – far more than the original hardware.

> ♪ When Unison [p.61] is selected in the main synth panel, this menu shows numbers from 2-8. This is the number of unison voices that will be used to generate a huge sound.

3.3.2.2. Edit History

Prophet-VS V keeps track of every move you make when you're editing a Preset. This lets you explore with confidence, because you can always get back to where you came from, or just a few steps back if you prefer. It's like a trail of "breadcrumbs."



- **Undo (left arrow):** Undoes the last change in Prophet-VS V.
- **Redo (right arrow):** Redoes the last change in Prophet-VS V.
- **Undo History (center menu icon):** Displays a scrollable list of changes. Click on a change to restore the Preset to that state.

CPU Meter and Panic Button:

Displays the current CPU usage of the instrument. Clicking on the meter sends all-notes-off and all-sounds-off MIDI messages to Prophet-VS V.

3.3.2.3. Macro Knobs

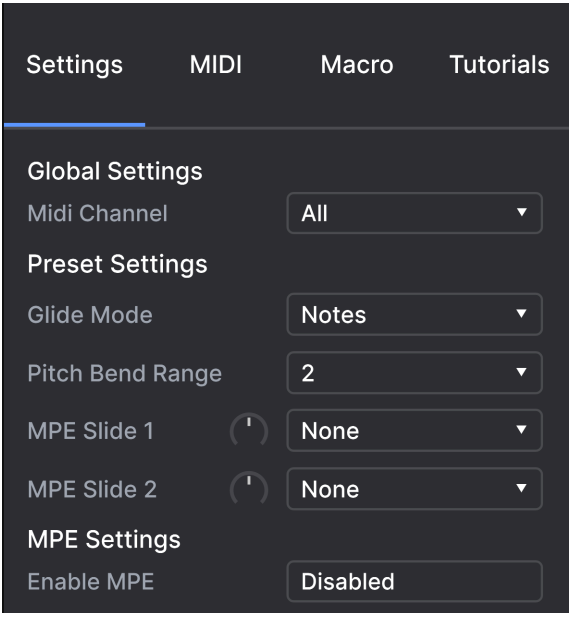
These four knobs control multiple parameters with a single turn. Assigning parameters to them is covered in the Macros section of the Side Panel [p.22] section below.

3.4. The Side Panel

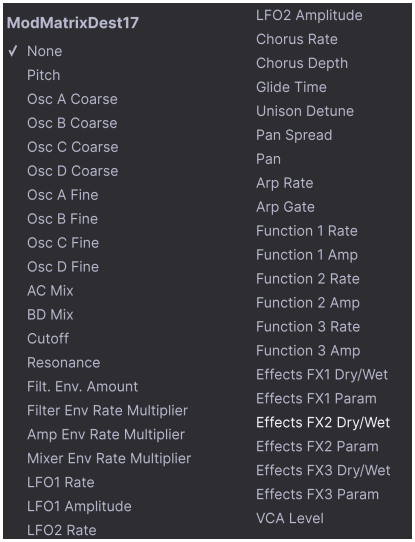
The gear-shaped icon at the top right of the upper toolbar opens the Side Panel, which in turn contains four useful tabs. Let's take them from left to right.

3.4.1. Settings

This tab covers Global and Preset settings. Global settings are the same for every Preset; Preset settings are saved at the Preset level.

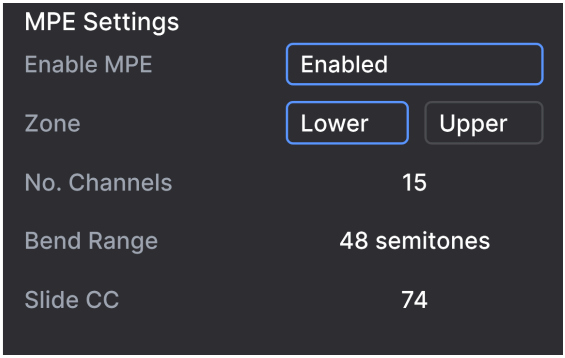


- **Glide Mode:** Sets the behavior when Glide [p.62] (portamento) is active.
    - Notes: Prophet-VS V glides between notes as on most synths.
    - Original: Prophet-VS V glides between voices as on the original hardware.
- **MIDI Channel:** Selects the MIDI channel(s) on which Prophet-VS will receive MIDI input: All (omni) or channels 1 through 16.
- **Pitch-Bend Range:** Sets the amount of pitch-bend produced by the onscreen pitch wheel and any physical control mapped to it.
- **MPE Slide 1-2:** Sets depth and two destinations for MPE slide when MPE is enabled (see below).



- **MPE Enable/Disable:** Allows Prophet-VS V to receive info from MPE MIDI controllers.

When MPE [p.24] is enabled, more settings appear:



- **Zone:** Selects whether Prophet-VS V will use the upper or lower zone of the controller, if the controller allows for splits.
- **No. Channels:** Sets the maximum number of MIDI channels on which Prophet-VS V receives MPE controller information.
- **Bend Range:** Sets the range of pitch-bend produced by MPE glide (X-axis) motion.
- **Slide CC:** Sets the MIDI continuous controller number for receiving MPE slide (Y-axis) motion.

3.4.1.1. What Is MPE?

Some of the above settings will be unfamiliar to users who have not yet encountered MPE. It stands for MIDI Polyphonic Expression, and it's a way of using multiple MIDI channels to make polyphonic performance gestures such as aftertouch work. Notable MPE controllers include the Haken Continuum, ROLI Seaboard family, and Keith McMillen Instruments KBoard Pro 49.

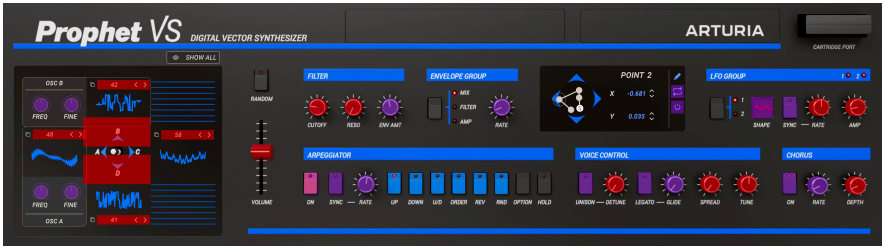
In addition to aftertouch, controllers like this typically support a "glide" motion, which means moving a finger side to side along the key surface or a ribbon; and a "slide" motion, which refers to moving a finger up and down the Y-axis of the key. In MPE mode, Prophet-VS V maps glide to pitch-bend and slide to two assignable destinations, per the settings above.

3.4.2. MIDI Tab

This is where Prophet-VS V may be placed in MIDI Learn mode. In this mode, all MIDI-assignable parameters on the main panel are highlighted so you can map physical controls on your MIDI controller to them. A typical example might be to map an expression pedal to the Master Volume control, or a physical knob to the Cutoff knob of the Filter section.

3.4.2.1. Assigning and Unassigning Controls

Click the **Learn** button in the MIDI tab to put Prophet-VS V into Learn mode. The controls available for assignment now appear in purple. Controls that are already assigned are red. (You can re-assign them, though.)



Click any purple control and its name will appear in the list to the right. Now, move a control or operate a switch on your MIDI controller. The corresponding control onscreen will turn red and the assigned MIDI CC number will appear in the list to the left of the parameter name.

To unassign a control onscreen, control-click or right-click it. Alternative methods of assignment are available in the MIDI Parameter Menu [p.27] described below.

3.4.2.2. Min and Max Values

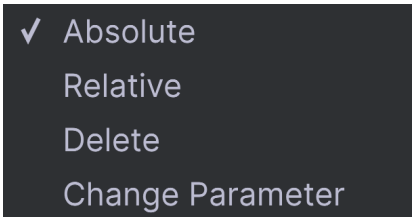
The **Min** and **Max** value columns for each parameter in the list let you scale the amount by which a parameter in Prophet-VS V changes in response to a physical control movement. For example, you may wish to limit the range of a filter sweep even though you're probably going to turn the knob all the way in live performance.

Drag up or down on a value to change it. If desired, you can set the maximum lower than the minimum. This reverses the polarity of the physical controller; i.e. turning it up will turn the assigned parameter down.

In the case of switches which only have two positions (On or Off, etc.), those would normally be assigned to buttons on your controller. But it is possible to toggle those with a fader or another control if you like.

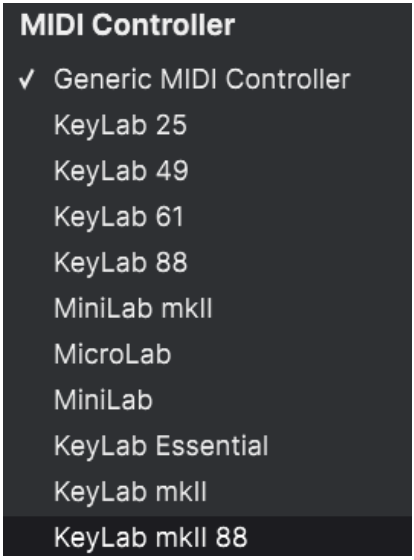
3.4.2.3. MIDI Parameter Menu

Control-clicking or right-clicking on any item in the list of assigned parameters brings up a convenient menu with the following options, which can be different for each parameter.



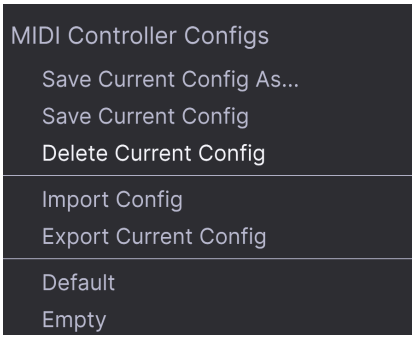
- **Absolute:** The assigned parameter in Prophet-VS V tracks the literal value your physical controller is sending out.
- **Relative:** The assigned parameter in Prophet-VS V will go up or down from its current value in response to physical controller movements. This is often useful when using endless 360-degree encoders.
- **Delete:** Removes the assignment and turns the corresponding onscreen control purple again.
- **Change Parameter:** Brings up a large sub-menu of every assignable parameter in Prophet-VS V. This lets you change the assignment of the current CC/physical control manually and is useful when you know exactly the destination you're looking for.

3.4.2.4. MIDI Controller Menu



At the top right of the MIDI tab is a drop-down menu where you can select templates for many Arturia MIDI controllers. These map physical controls to many "most reached for" parameters in Prophet-VS V. A Generic template is also provided for third-party MIDI controllers.

3.4.2.5. MIDI Config Menu



Another drop-down lets you manage different sets of MIDI maps for controlling Prophet-VS V from MIDI hardware. You can save/save as the current MIDI assignment setup, delete it, import a configuration file, or export the currently active one.

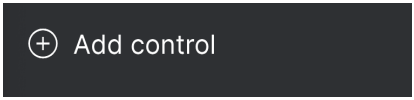
This is a quick way to set up different hardware MIDI keyboards or controllers with Prophet-VS V without having to build all the assignments from scratch each time you swap hardware.

For example, if you have multiple hardware controllers (small live keyboard, large studio keyboard, pad controller, etc.), you can create a profile for each of them just once, and then quickly load it here. This saves you from having to redo the MIDI mapping assignments from scratch each time you swap hardware.

Two options in this menu are especially powerful:

- **Default:** Gives you a starting point with pre-determined controller assignments.
- **Empty:** Removes the assignments of all controls.

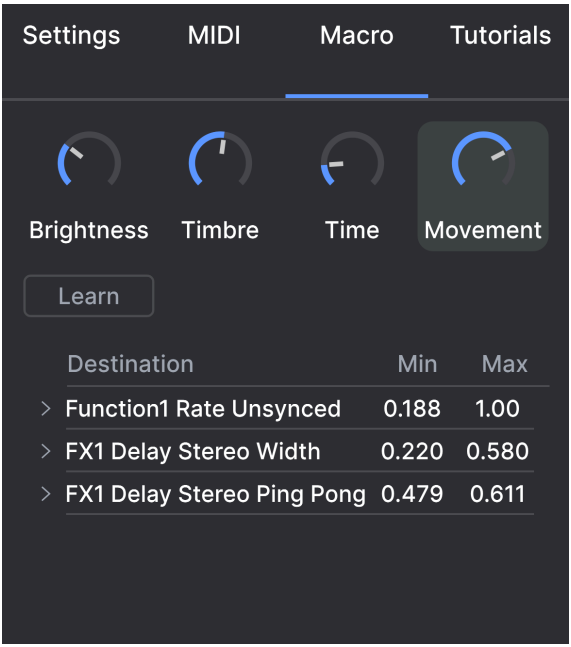
3.4.2.6. Add Control



Click on the **Add Control** option at the bottom of the MIDI tab to bring up a massive pop-up of every MIDI-assignable parameter in Prophet-VS V. You can then scroll through the pop-up and click on a control name to add it to the assignment list. This is useful when you know exactly what parameter you want (e.g. something in the Advanced modulations or the effects), but don't want to hunt for it in the graphical interface.

3.4.3. Macros Tab

This tab handles assignments for the four Macro knobs at the right side of the lower toolbar. You can assign multiple parameters to each one, then MIDI Learn [p.25] the Macro itself to a physical control for powerful performance control over multiple parameters via a single knob twist.



♪ Macros are saved at the Preset level.

3.4.3.1. Macro Slots

Click one of the Macro knobs to select which Macro you want to work assign parameters to. The default names are Brightness, Timbre, Time, and Movement. You may rename them by clicking in the name field, then typing. The name of the corresponding knob in the Lower Toolbar will change as well.

3.4.3.2. Creating Macros

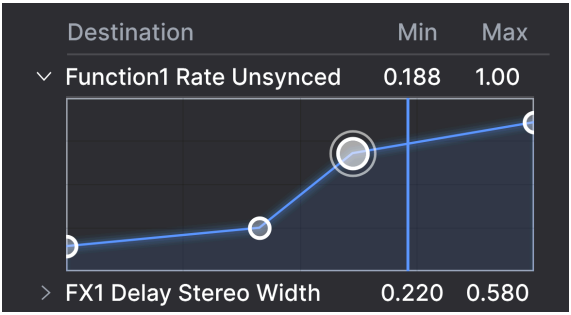
Click the Learn button in the Macro tab and you will see that the process works much like MIDI assignments: Available destinations turn purple and ones already assigned turn red. Click on a purple control onscreen and its name will appear on the list.

To remove a parameter from the Macro, control-click or right-click its name in the list and select Delete. Parameters under Macro control have **Min** and **Max** values and may be scaled by dragging up or down directly on the number, similarly to MIDI assignments. To reverse the polarity of a parameter (i.e. it goes down when you turn the Macro knob up and vice-versa), set the minimum value higher than the maximum.

> ♪ There are no rules for what to name a Macro or which parameters to put in it. You could name a Macro after a favorite TV character and group a handful of unrelated parameters there. In practice it's probably better to keep things more descriptive.

3.4.3.3. Macro Curves

Beyond simple scaling, you can customize a curve that determines how each parameter under the Macro's control proceeds from its minimum to maximum value and back when you turn the Macro knob. Click the > icon next to the parameter name to open the curve window.



Click on the curve to add a "breakpoint," represented by a small circle. You can then drag the point and the curve segments between it and its nearest neighbors will change accordingly. Right- or control-click on a point to remove it. The first and last breakpoints cannot be removed.

> ♪ A simple diagonal line would produce a linear curve, but the potential fun here is to make things non-linear.

3.4.4. Tutorials

In this tab, which can also be opened by selecting Tutorials from the Main Menu [p.14], you can click on titles for the individual chapters, which in turn will take you through different areas of Prophet-VS V in steps. The parts of the panel to focus on are highlighted as you go.

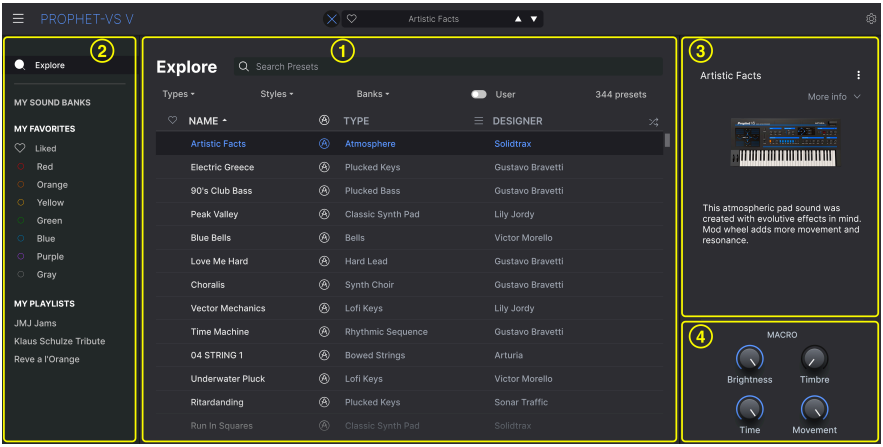
! If you're editing a Preset, make sure to save it before opening the Tutorials because doing so will load a new Preset and overwrite your changes. The Tutorials also take over the Side Panel space when in use.

4. THE PRESET BROWSER

The Preset Browser is how you search, load, and manage sounds in Prophet-VS V. It has different views but they all access the same banks of Presets.

To access the search view, click the browser button (the icon looks a bit like books on a library shelf). To close the browser, click the X that appears in its place.

The browser has four main areas:



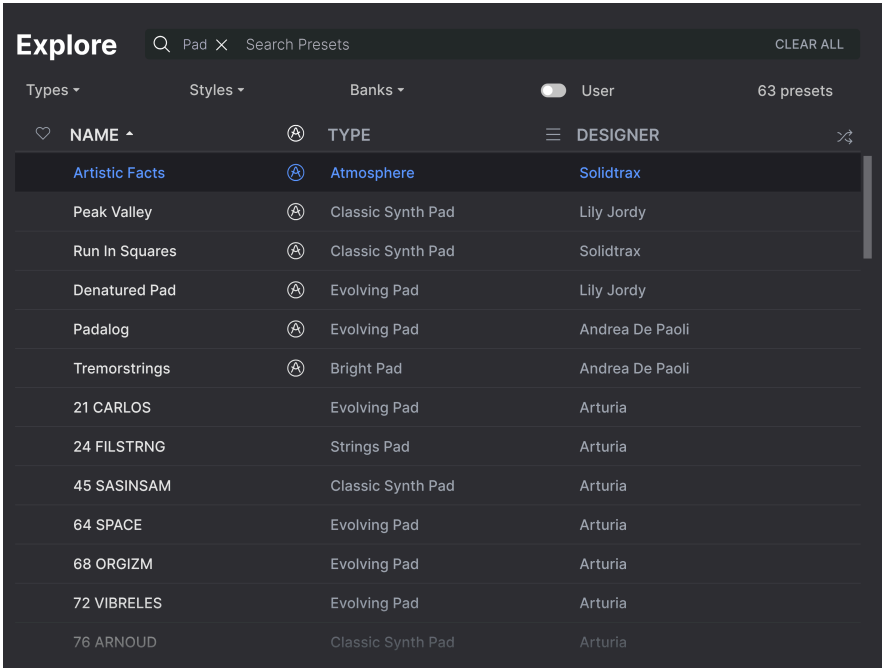
The full Preset Browser window

Number	Area	Description
1.	Search and Results [p.33]	Search Presets with text strings, and by tags for Type and Style.
2.	Sidebar [p.38]	Manage Banks and Playlists.
3.	Preset Info [p.41]	Summary of Bank and Tags, Designer name, and description info for current Preset.
4.	Macro Knobs [p.21]	Large size duplicates of Macro knobs in Lower Toolbar.

4.1. Search and Results

Click on the Search field at the top and enter any search term. The browser will filter your search in two ways: First, by matching letters in the Preset name. Then, if your search term is close to that of a Type or Style [p.34] it will include results fitting those tags as well.

The Results list beneath shows all Presets that fit your search. Click the X icon at right to clear your search terms.



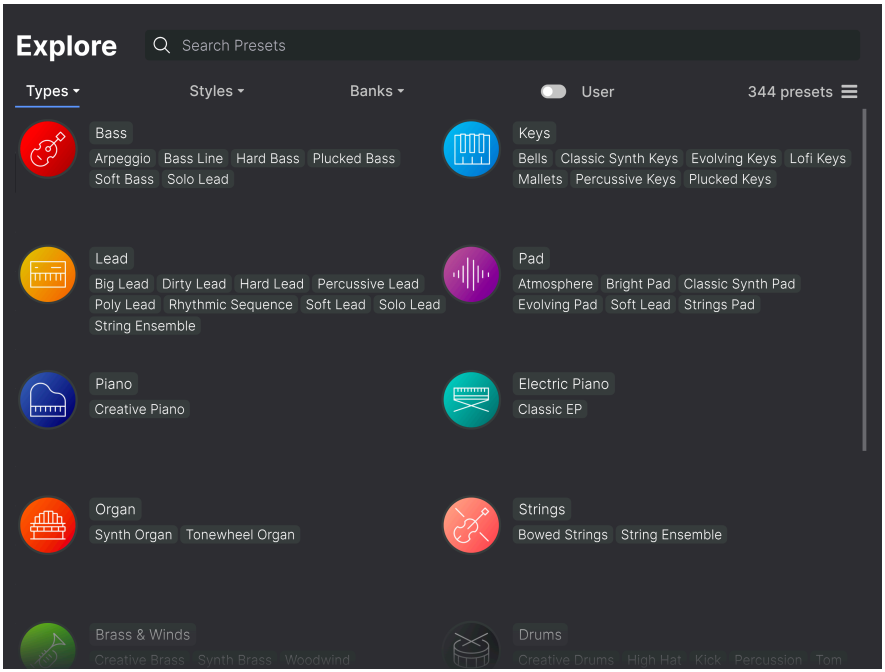
Filter by typing text in the Search field

4.2. Using Tags as a Filter

You can narrow (and sometimes expand) your search using different tags. There are two kinds of tags: *Types* and *Styles*. You can filter by one, the other, or both.

4.2.1. Types

Types are categories of instruments and musical roles: bass, leads, strings, pads, organs, and more. With a clear search bar, click the **Types** button to bring up a list of types. Notice that each type also has several sub-types:



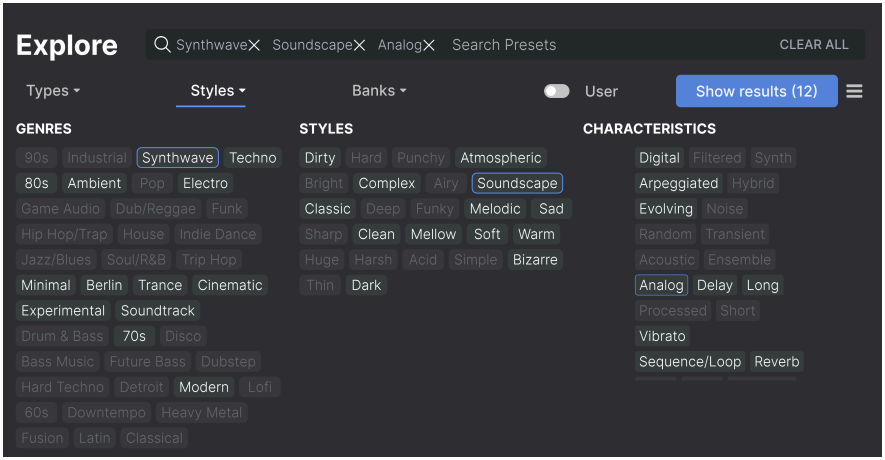
Click any one of them, and the results will show only Presets that match that tag. You can also select multiple Types using Cmd-click (macOS) or Ctrl-click (Windows). For example, if you aren't sure whether the Preset you're looking for was tagged with Keys or Pad, select both to broaden the search.

Results columns can be inverted by clicking the arrow buttons to the right of their titles (Name, Type, Designer).

4.2.2. Styles

Styles refine your search according to further musical attributes. Accessed by the **Styles** button, this area has three further subdivisions:

- *Genres*: Identifiable musical genres such as decades, Trance, Techno, Synthwave, Disco, etc.
- *Styles*: General "vibe" such as Atmospheric, Dirty, Clean, Complex, Mellow, etc.
- *Characteristics*: Sonic attributes such as Analog, Evolving, Distorted, Dry, Rise, etc.



Click on any tag to select it. Click again (or right-click) on any selected tag to de-select it. Notice that when you select a tag, several other tags usually disappear. This is because the browser is narrowing your search by a process of elimination. De-select any tag to remove that criterion and widen the search without having to start all over again.

4.2.3. Banks

Next to the **Types** and **Styles** buttons is the **Banks** button, which lets you do your search (using all the methods above) within the factory bank or user banks.

4.3. Search Results window

Click the **Show Results** button if you cannot already see your list of results. Click the sort arrow to reverse the alphabetical order of any column.

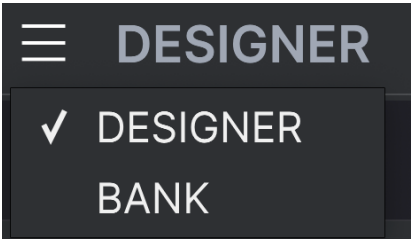
4.3.1. Sorting the Preset Order

Click the **NAME** header in first column of the Results list to sort Presets in ascending or descending alphabetical order.

Click the **TYPE** header in the second column to do the same thing by Type.

Click the **Arturia logo** to the left of **TYPE** to bring factory-featured Presets to the top of the list. These will appear just under any Presets you have liked [p.37].

The third column has two header options: **DESIGNER** and **BANK**. Click the icon with three lines to choose between the two. Then click either header name as with the other two columns to switch the alphabetical order.

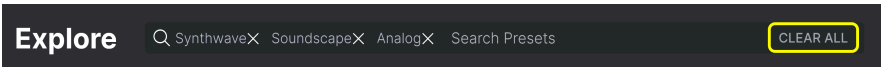


Click the ♥ to sort by liked presets.

Click the two intertwined arrows to sort presets at random.

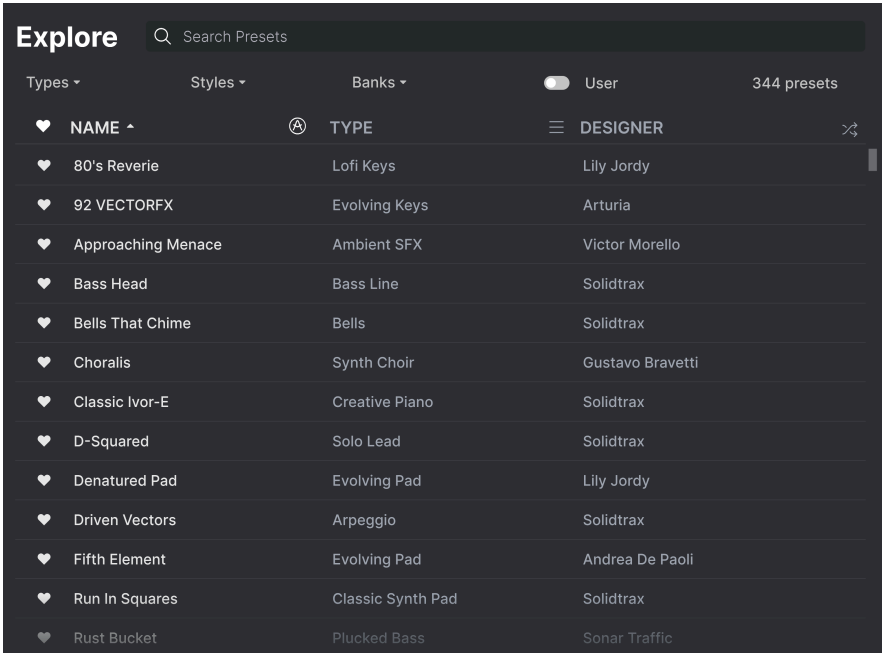
4.3.2. Clearing Tags

Just above the Types, Styles, and Banks buttons, you will see labels for all the active tags in a search. Click the X next to any one to remove it (and thus broaden the results). Click **Clear ALL** to remove all tags.



4.3.3. Liking Presets

As you explore and create Presets you can mark them as Liked by clicking the **heart** next to their names. later, click on the heart icon to put all of your favorites at the top of the Results list.

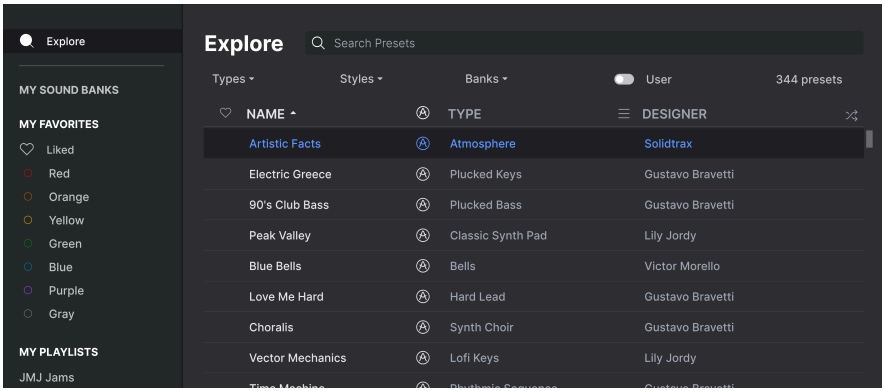


Use as many of the sorting and filtering features as you need and you will find the exact sound you want every time.

4.4. Sidebar

The leftmost section of the Preset Browser determines what is displayed in the Search and Results [p.33] section.

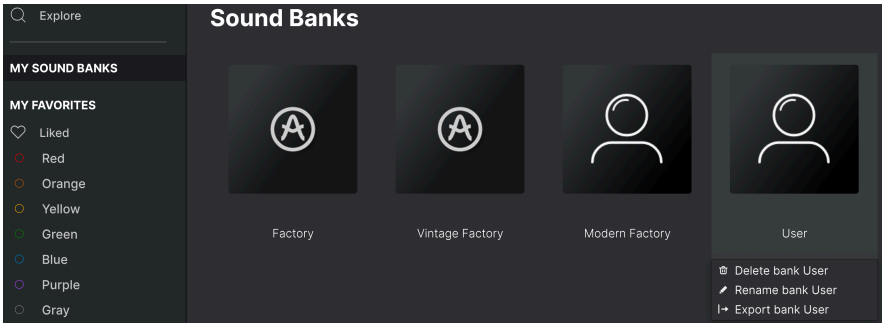
The topmost option is:



The **Explore** section is the default, letting you search the current bank of Presets loaded into Prophet-VS V as we did in the previous section.

4.4.1. My Sound Banks

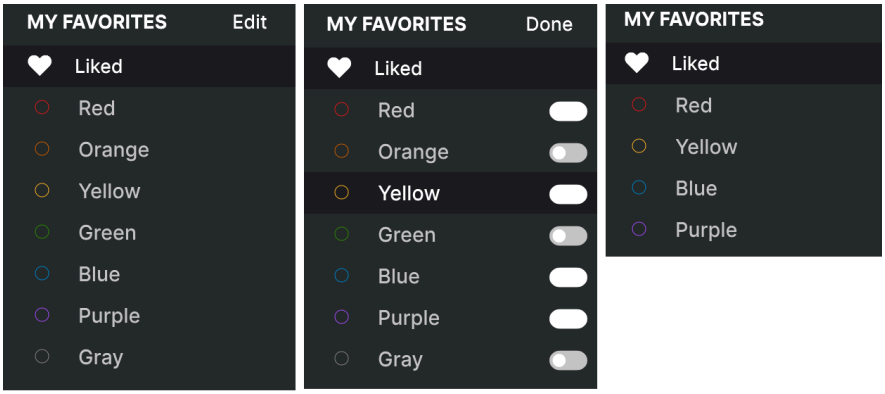
Clicking **My Sound Banks** brings up a window with all of the currently available Sound Banks, starting with the Factory bank. User banks appear next to it, and can be deleted, renamed, or exported by right-clicking them.



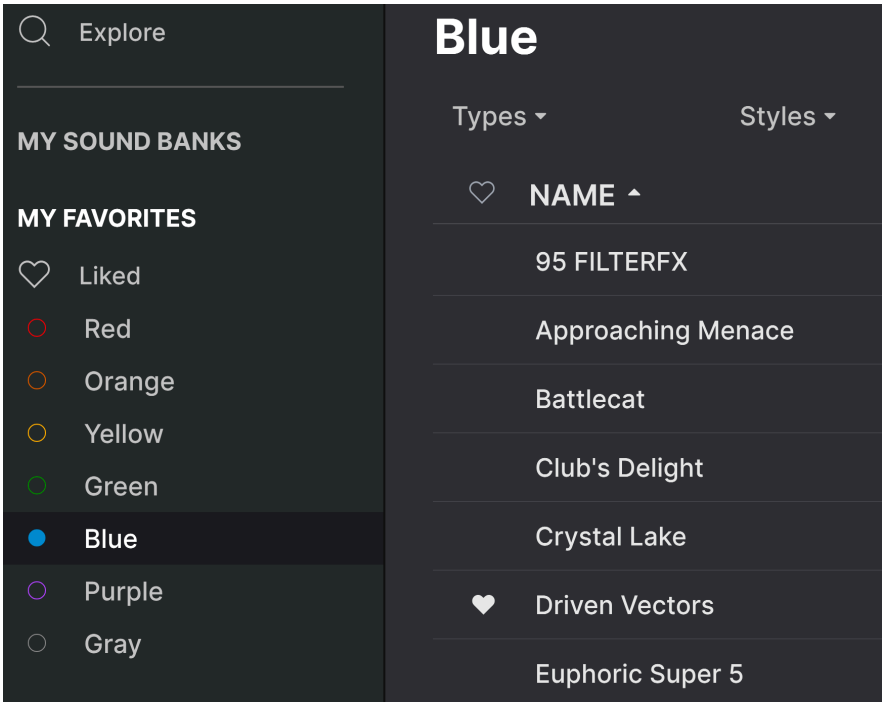
4.4.2. My Favorites

The middle part of the Sidebar has a menu called **My Favorites**, which allows you to color-code certain groups of Presets for easy access. It also includes the **Liked** group, so you can quickly find Presets you've marked with the heart icon.

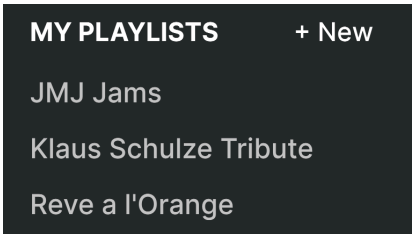
To decide which colors you'd like to display, hover over **My Favorites** and click **Edit**. Then use the buttons to select which colors you'd like to see or hide, and then click **Done**.



To add Presets to a particular set of Favorites, simply drag and drop them over the appropriate color. Then click on the color itself to display your grouping.



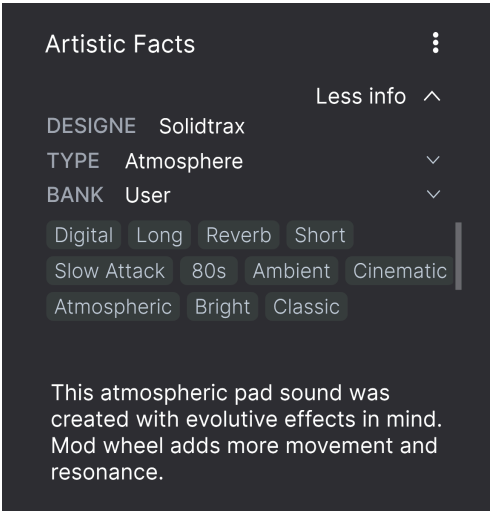
4.4.3. My Playlists



The bottom part of the sidebar displays any Playlists you have created or imported. Playlists are a very powerful management tool for set lists for gigs. Learn more about them in the Playlists section [p.45] below.

4.5. Preset Info Section

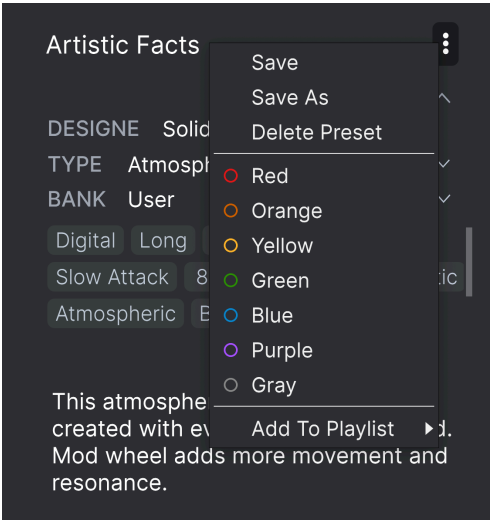
The right side of the browser window shows specific information about each Preset. The information for User Presets (but not Factory ones) may be changed here: Name, Type, Favorite, etc.



To make the desired changes, you can type in the text fields, use one of the pull-down menus to change the Bank or Type, and click the + sign to add or delete Styles.

Types and Styles changes you make here are reflected in searches. For example, if you remove the "Funky" Style tag and then save that Preset, it will not show up in future searches for Funky sounds.

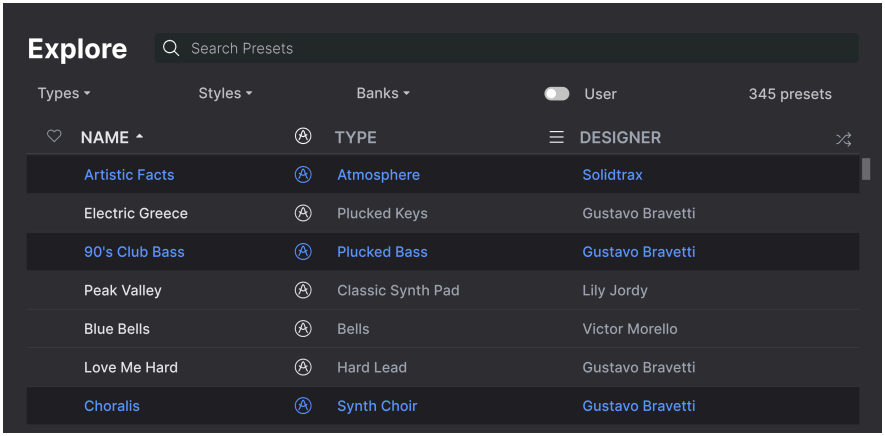
Clicking on the three-dots icon at the top right pops up a menu with organizational options for the Preset.



Options include **Save Preset**, **Save Preset As**, **Delete Preset**, and **Add to Playlist**, complete with an option to create a new Playlist. The lines with color icons allow you to add the Preset to a particular group of Favorites, which we'll describe below.

4.5.1. Editing Info for Multiple Presets

If you'd like to move several Presets to a different bank while preparing for a performance, or enter a single comment for several Presets at the same time, it's easy to do. Simply hold command (macOS) or ctrl (Windows) and click the names of the Presets you want to change in the Results list. Then enter the comments, change the Bank or Type, etc., and save the Preset.



You can also select all following/preceding presets with shift + click.

> ♪ If you want to alter the information for a Factory Preset you must first use the *Save As* command to re-save it as a User Preset. After this the Info section will gain Edit and Delete buttons at the bottom of the window.

4.6. Preset Selection: Other Methods

Click on the Preset name in the center of the Upper Toolbar to bring up a drop-down menu. The first option in this menu is **All Types**, and it brings up a submenu of literally every Preset in the current bank.

Below this are options that correspond to the Type tags. Each of these brings up a submenu of all Presets of its Type.

If you have an active search by Type and/or Style, the up/down arrows to the right of the Preset name will step through only the results that conform to your search.

However, "All Types" in the drop-down menu always ignores those criteria. Likewise for the Type choices below the line – they always include all Presets within that Type.

4.7. Macro Knobs

These are simply larger duplicates of the Macro knobs in the Lower Toolbar. Move one and its partner moves with it.

Assigning parameters to Macros is covered in the Macro Tab [p.29] section of Chapter 3.

4.8. Playlists

Playlists are a way to collect Presets into different groups for different purposes, such as a set list for a particular performance or a batch of Presets related to a particular studio project. Within a Playlist, Presets can be reordered and grouped into Songs, a handy addition to a set list.

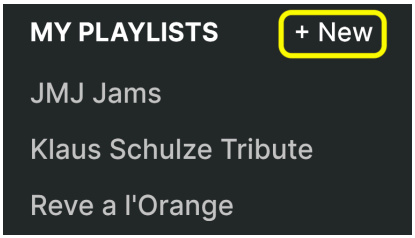
The **My Playlists** subheading appears under **My Favorites** in the Sidebar. However, when you first start using Prophet-VS V, you'll have no Playlists yet, and the **My Playlists** subheading won't be there yet. To make it appear, you'll have to create your first Playlist.

4.8.1. Create your first Playlist

To get started, drag any Preset to the Sidebar. The **My Playlists** heading will appear, along with a **+ New** icon. Drop the Preset onto the **+ New** icon, and you will then be given a pop-up to name your first Playlist. Once you've created one Playlist, the **My Playlists** heading will become a permanent part of the Sidebar.

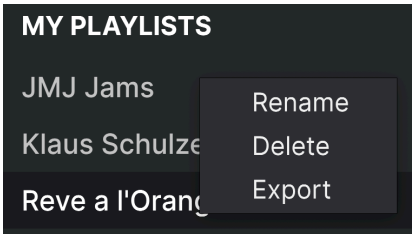
4.8.2. Add a Playlist

To add a Playlist, hover your mouse over the **My Playlists** heading and click the **+ New** icon when it appears.



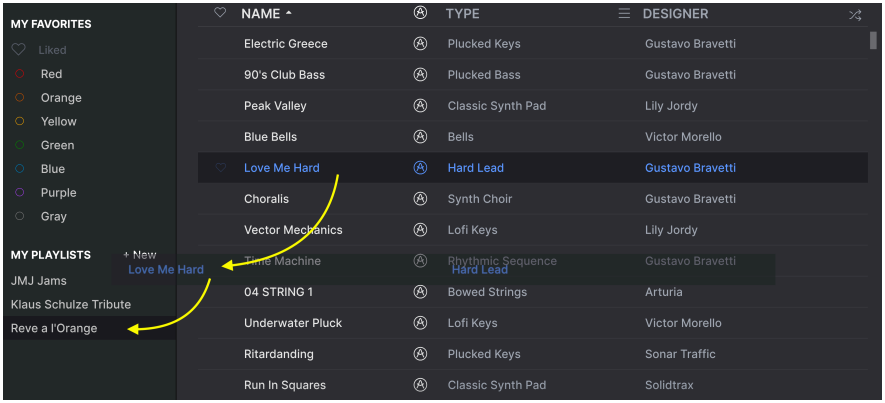
Give the Playlist a name and it will appear in the Playlists menu in the Sidebar.

Once you've created some Playlists, right-clicking on a Playlist name will pop up a set of options – you can **Rename**, **Delete**, or **Export** the Playlist to your computer, as a file with the .aplist extension.



4.8.3. Add a Preset

You can use all of the options in the Explore window to locate Presets for your Playlist. When you find a desired Preset, click-drag it onto the Playlist name.

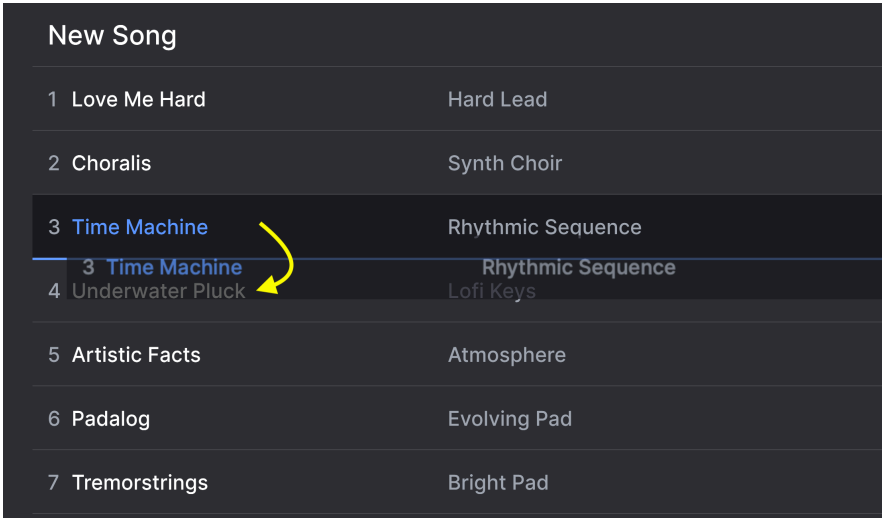


Click and drag from the Search Results list onto one of the playlists

To view the contents of a playlist, click on the playlist name.

4.8.4. Re-order the Presets

Presets may be reorganized within a Playlist. For example, to move a Preset from slot 3 to slot 4, drag and drop the Preset to the desired location.

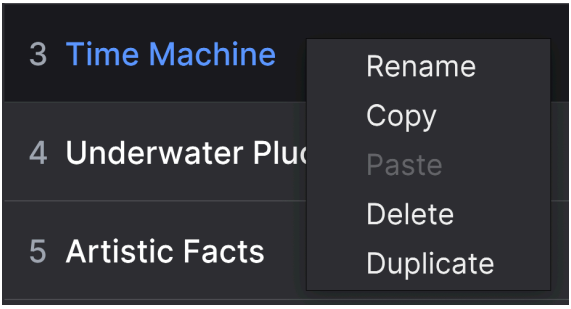


The white line indicates the final destination of the Preset you're dragging.

This will move other Presets up in the list to accommodate the new location of the Preset you just moved. A bright white line will briefly appear at the "insert point."

4.8.5. Remove a Preset

To delete a Preset from a playlist, right-click on its name to bring up a pop-up menu.

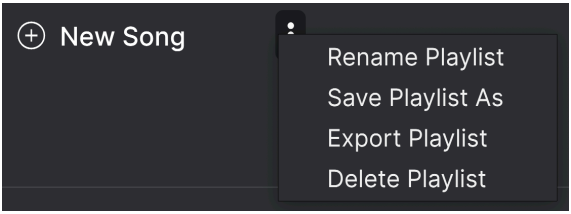


This menu also includes **Rename**, **Copy**, **Paste**, and **Duplicate** options. More management options are described below.

4.8.6. New Song and Playlist Management

The **New Song** button creates a new Song at the bottom of the Playlist. You can name it, then click and drag it to position it in the Playlist and add Presets to it in the desired order.

To access other Playlist management options, click on the three dots icon next to the **New Song** button. This brings up a pull-down menu:



- **Rename Playlist**: Renames the current Playlist without making a copy.
- **Save Playlist As**: Creates a duplicate of the playlist with "Copy" appended to the name. You can change the name before saving.
- **Export Playlist**: Exports your Playlist to a location on your computer, with the filename extension "aplst."
- **Delete Playlist**: Deletes the current Playlist but does *not* delete any of the Presets in it.

5. MAIN PANEL

The main panel area duplicates the features of the original Prophet-VS, then adds some innovative features of our own.

The main sections of the panel are as follows.

Number	Area	Description
1.	Oscillator Section [p.51]	The four oscillators, morphing joystick, and related parameters.
2.	Filter [p.54]	The Prophet VS' analog 24dB-per-octave filter.
3.	Envelope Group [p.55]	Envelope controls and display for oscillator mix, filter, and amplifier.
4.	LFO Group [p.58]	Controls for the two main LFOs, as on the original Prophet-VS.
5.	Arpeggiator [p.59]	Controls for the Prophet-VS V arpeggiator.
6.	Voice Control [p.61]	Unison, glide/portamento, stereo spread, and master tuning.
7.	Chorus [p.63]	Settings for the built-in chorus the original VS used to thicken the sound.

5.1. Architecture

The Prophet VS' four digital oscillators could each generate a different waveform, with a choice of 95 single-cycle waves (plus 32 user waves) on the hardware original. We have expanded upon that greatly, which we will detail in the part of this chapter about the oscillator section.

The analog filter was a 24dB-per-octave Curtis filter. The VS has two LFOs and an arpeggiator, which we have duplicated and placed in the spot where the patch storage buttons would have been. (We have the Preset Browser [p.32] for that, after all.)

A basic chorus was on hand to widen and thicken the sound, and in conjunction with the analog filter, it imparted a warmer quality to the VS than musicians of the time might have expected from a digital synth. In this writer's opinion, it outdid the PPG Wave (for example) for being able to sound analog if one wanted it to.

That's a highly oversimplified tour of the Prophet-VS. We'll learn more as we proceed through the control sections.

5.2. Common Behaviors

Virtually all controls on the main panel (and elsewhere in Prophet-VS V) follow a few rules designed to make things more convenient for you, the musician.

5.2.1. Value Pop-Ups

Operate or hover the mouse on any knob, and a pop-up a.k.a. "tool tip" appears, displaying its current value.

5.2.2. Fine Adjustments

To adjust a control more slowly and therefore more precisely, hold Control or use the right mouse button while operating it.

5.2.3. Parameter Name Display

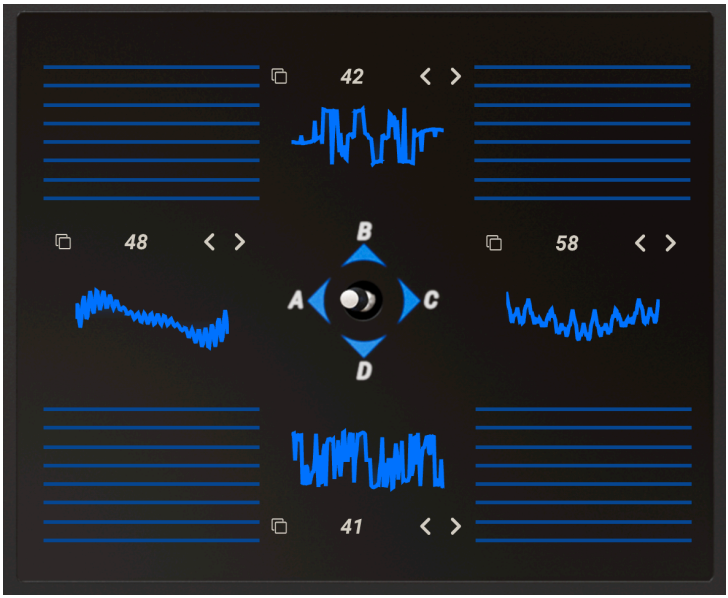
As mentioned in Chapter 3, operating or hovering on any control will cause its full name to appear in the left side of the Lower Toolbar [p.19].

5.2.4. Double Click for Default

Last but not least, you can double-click on any control to return it to its default value.

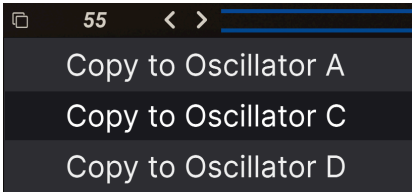
5.3. Oscillator Section

The oscillator pane contains waveform selection and other controls for the four oscillators, as well as the VS' signature morphing joystick.



The above image is the default view. Simply click on the arrows to select the waveform for each oscillator, and move the joystick to adjust the blend of the waveforms.

You can also copy a waveform from one oscillator "container" to another by clicking the overlapping-squares icon, which will bring up this menu:

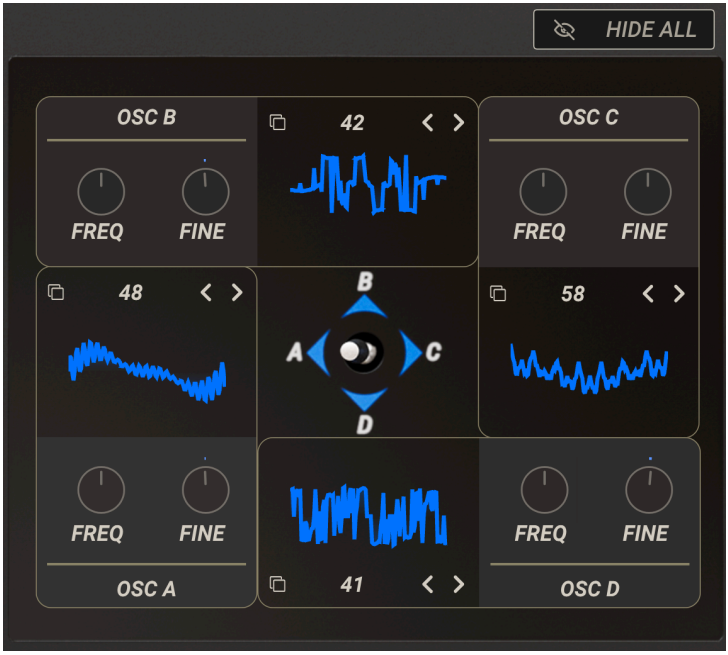


♪ The A-to-C and B-to-D axes of the joystick are MIDI-learnable. If you have a controller keyboard that features a joystick or X-Y touchpad, this is the perfect application for those devices.

5.3.1. Tuning Controls

Hover on the blue horizontal lines to reveal additional controls for each oscillator. There is also a **Show All**/**Hide All** option at the upper right corner.

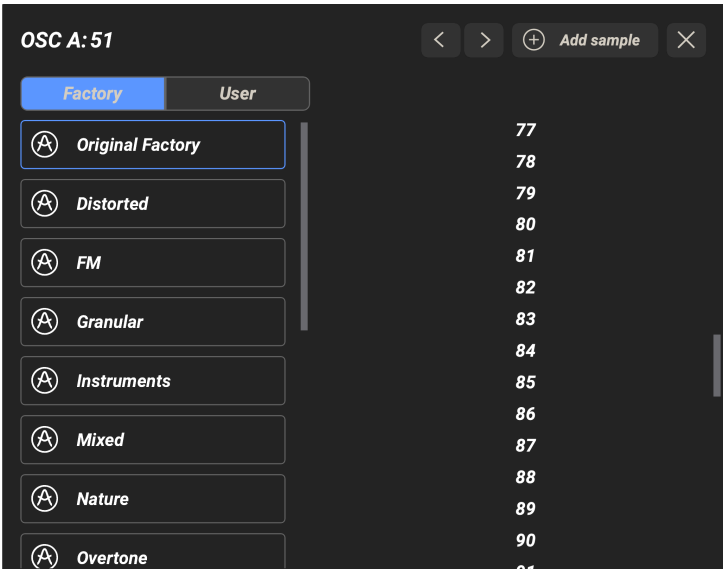
This image shows all oscillators' controls open:



The **Freq** knob coarse-tunes each oscillator in semitones, and the **Fine** knob tunes to one semitone in either direction at extremely high resolution – up to a thousandth of a semitone!

5.3.2. Waveform Browser

We have vastly expanded the waveform complement of the original Prophet-VS, including the expansion waveforms that originally were stored on cartridges. Simply click on any oscillator's waveform image or number to open a browser in which you can select from many categories of waveforms.



"Original Factory" waves are identical to those in the hardware Prophet-VS. The *User* category includes waves you have imported. Which brings us to ...

5.3.3. Importing Waveforms

Prophet-VS V lets you import your own samples for use as oscillator waveforms. Click **Add Sample** at the top of the browser to open a dialogue box on your desktop where you can navigate to the audio file you wish to import. Prophet-VS V supports WAV files, and to be faithful to how the original hardware worked, it converts the first 128 samples of the file into the equivalent of a single-cycle waveform.

> ♪ "Single-cycle" refers to a waveform that passes through one positive phase and one negative phase. To make the most of the limited digital memory available in the 1980s, the Prophet-VS stored waveforms in this format and looped them to create sustained notes.

5.4. Filter

The filter of the Prophet-VS was a very straightforward affair, intended to give musicians some familiar analog sound-sculpting for its newfangled digital waveforms. It was a four-pole (24dB-per-octave) lowpass ladder filter that used a Curtis microchip.

- **Cutoff:** Adjusts the filter cutoff frequency.
- **Reso:** Sets the level of a peak of frequencies directly at the cutoff.
- **Env. Amt.:** Controls the degree to which the filter envelope from the Envelope Group [p.55] affects the cutoff behavior.

5.5. Envelope Group

There are three envelopes in Prophet-VS V: one for the oscillator mix, one for the filter cutoff, and one for the amp (volume). The user interface lets you make quick adjustments to them on a graph, but for more precise adjustments we recommend using the Envelopes Tab [p.67] in the Advanced Panel.

5.5.1. Common Controls

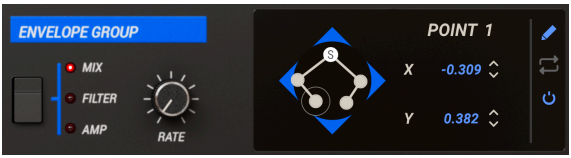
The three envelopes have the following controls in common:

- **Envelope Select:** The button switches the display and controls between Mix, Filter, and Amp envelopes.
- **Rate:** Adjusts the overall speed at which the envelope proceeds through its stages.

> ♪ The Rate may be synced to master tempo in the Advanced Panel [p.67].

5.5.2. Mix Envelope

The Mix "Envelope" is in fact an automator for the oscillator joystick. That is, it changes the oscillator blend along a path, as if you were moving the joystick by hand. (Again, more precise adjustment is available in the Mix Envelope Controls [p.69] of the Advanced Panel, which is covered in the next chapter.)



This envelope can have up to five *breakpoints*, which are places where the path of the joystick changes direction. Any line segment between two points is in fact the *vector* in "vector synthesis." Play a note, and a moving "puck" shows the position of the Mix Envelope in real time.

To adjust the envelope visually, simply click and drag on any breakpoint. Click outside of a breakpoint to add another point (up to five), or right-click on a breakpoint to remove it.

♪ When the Mix Envelope is inactive, the joystick blends the waveforms in real time. When the Mix Envelope is active, it overrides the joystick. If you move the joystick while the Mix Envelope is running, it acts as an offset.

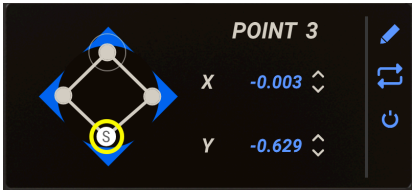
There are also the following parameters for more precise control:

- **Point:** Drag on the point number at the top of the display to select a breakpoint for editing.
- **X:** Drag on the numerical field to change the point's horizontal position.
- **Y:** Drag on the numerical field to change the point's vertical position.
- **Pencil Tool:** Jumps to the Mix Envelope settings on the Advanced Panel.
- **Loop:** When engaged, the Mix Envelope will loop according to the Start, End, and Repeat settings in the Loop Mode [p.71] controls on the Advanced Panel.
- **On/Off:** Engages or bypasses the movement of the mix envelope without losing any of the settings. The joystick still mixes the waveforms according to its position.

! It's possible to position a breakpoint directly overlapping another. Doing this does *not* mean you're creating some kind of loop, even though it looks that way visually. Whether and how many times the envelope loops is determined by loop settings as noted above. When two breakpoints overlap, it just means they represent the same blend of the four oscillators.

♪ The Mix Envelope will retrigger from its starting point when new notes are played.

5.5.2.1. "S" Marks the Spot



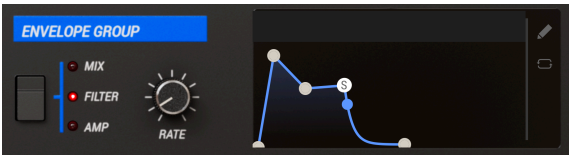
The breakpoint marked with "S" is the sustain point of the Mix Envelope. Double-click on a breakpoint to specify it as the sustain point.

A traditional volume or filter envelope plays through to the sustain phase when you press a key, then holds there until you release the key, then the release phase begins. With the Mix Envelope, the role of the sustain point is similar – the envelope (and therefore the oscillator blend) can pause there until you release a key, then continue along its path. The behavior is different depending on whether Loop mode is active.

- **Loop Mode Off:** If the sustain point is reached, the Mix Envelope will pause there until the note is released.
- **Loop Mode On:** When a note is played, the Mix Envelope starts at the first point. When it reaches the loop start pointmarker, it then cycles between the loop start and end points until the note is released or the maximum number of repeats is reached.

In other words, Loop Mode replaces the sustain *point* with an entire chunk of the Mix Envelope. Nominally, the sustain point is the same as the loop end point. See Loop Mode [p.71] in the next chapter for specifics on loop behavior.

5.5.3. Filter Envelope



Like the Mix Envelope, the Filter Envelope features graphically adjustable breakpoints. It features three modes [p.72] selectable in the Advanced Panel: original Prophet-VS, multi-segment, and DADSR. The multi-segment (MSEG) mode is especially cool, because it lets you create double attacks, double decays, an "M"-shaped envelope that decays and then increases again, and other unconventional shapes.

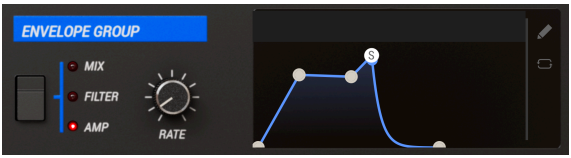
- **Loop:** Toggles Loop mode. Using the original Prophet-VS envelope, the loop can play from 2 to 7 times or infinitely. With a multi-segment envelope, the loop is continuous between user-determined start and end points.
- **Pencil Tool:** Shortcuts to deeper settings (including for loops) on the Advanced Panel [p.72].

The breakpoint marked **S** indicates the sustain point of the envelope.

As with the Mix Envelope, the **Pencil Tool** is a shortcut to deeper settings [p.72] on the Advanced Panel.

The Filter Envelope is fully polyphonic, meaning that each new voice played gets its own cycle starting from the first breakpoint of the envelope.

5.5.4. Amp Envelope



The Amp Envelope operates identically to the Filter Envelope, except for the fact that it controls the volume level of all oscillators instead of the filter cutoff frequency. It also features original Prophet-VS, multi-segment, and DADSR modes selectable in the Advanced Panel. Again, click the **Pencil Tool** to go directly to these settings.

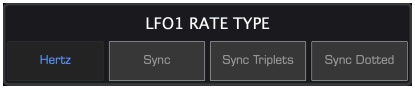
5.6. LFO Group

The Prophet-VS featured two LFOs. In Prophet-VS V, you may assign these to multiple destinations in the Modulation Matrix [p.84] of the Advanced Panel. Here, we will simply cover their basic controls.

- **Select:** The button on the left toggles the control between LFO 1 and LFO 2.
- **Shape:** Drag on the waveform display to change the LFO waveform.
- **Sync:** When engaged, the LFO rate syncs to master tempo. This option is independent per LFO.
- **Rate:** Determines the LFO rate. When synced to tempo, this is expressed as a rhythmic subdivision. The two LEDs at the top right show the speed of each LFO.
- **Amp:** Short for amplitude, this is in fact the LFO depth.

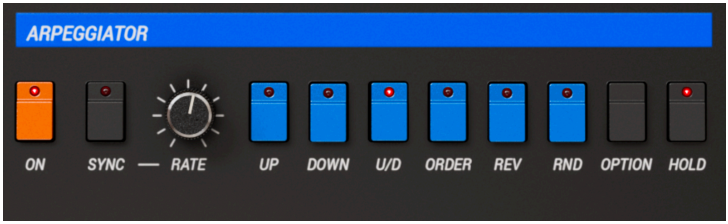
5.6.1. LFO Sync

Pressing the **Sync** button brings up the following pop-up, which lets you sync either LFO to master tempo, with straight, triplet, and dotted feel options:



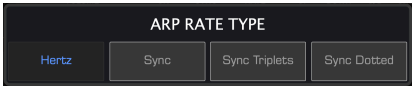
5.7. Arpeggiator

This location is roughly where the patch memory buttons were located on a hardware Prophet-VS. We devoted this space to a replica of the original Prophet-VS arpeggiator. It will turn any group of notes you hold into a rolling, repeating pattern.



- **On:** Turns the Arpeggiator on or off.
- **Sync:** Determines whether the Arpeggiator free-runs in Hertz or is synced to master tempo (see below).
- **Rate:** Sets the Arpeggiator rate. If Sync is active, this is a rhythmic division (or multiple) of the master tempo.
- **Pattern:** Sets the type of Arpeggiator pattern: Up, Down, Up/Down, Order-as-Played, or Random. *Rev* reverses the note order of the most recent pattern selected.
- **Option:** Opens menu of additional Arpeggiator Settings [p.60] (see below).
- **Hold:** Functions as a feet-free sustain pedal, whether or not the Arpeggiator is turned on.

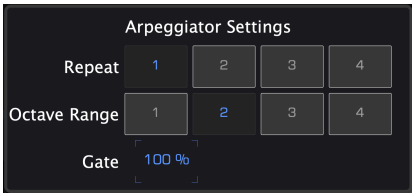
5.7.1. Arpeggiator Sync Options



Like the LFO, the Arpeggiator offers free-running and sync-to-tempo modes including triplet and dotted rhythmic feels. Pressing **Sync** displays the above menu.

5.7.2. Arpeggiator Settings

Clicking on the **Option** button brings up a menu that allows you to set gate time, octave range, and note repeats:

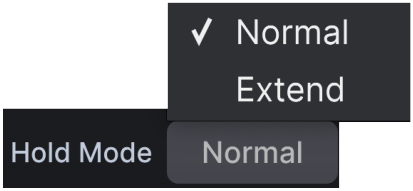


- **Repeat:** Sets the number of times a note is repeated on a *single step* of the Arpeggiator pattern.
- **Octave Range:** Changes the number of octaves through which the pattern will ascend and/or descend.
- **Gate:** Drag to adjust the gate time or "window" of note length per step/note.

! Reducing the Gate time makes arpeggiated notes sound more "abrupt." With Gate time at 100% and Repeat at 2, 3, or 4, you may not hear any note repeats but the number of notes played on a given step still increases. This makes the Arpeggiator sound like it has slowed down. Reduce Gate time to correct this.

5.7.3. Arpeggiator Hold Modes

Hold has two modes when the Arpeggiator [p.59] is on, accessed from a menu in the lower toolbar.



Normal Mode is quite useful for sound design, as you can adjust settings without needing to keep notes held or your foot on a sustain pedal. Also, it will not turn Arpeggiator patterns into mush where every note is sustained; it will just let the patterns keep playing.

Extend Mode allows you to keep adding new notes to the pattern by playing, effectively turning the arpeggiator into a basic sequencer.

5.8. Voice Control

This section of the panel governs how the virtual keyboard – and your connected MIDI controller – interact with the Prophet-VS V sound engine.

5.8.1. Unison

Unison mode, a feature of many classic analog synths, "stacks" the voices, resulting in less polyphony (or often monophonic playing) but potentially monstrously huge sounds.

- **Unison:** Engages and disengages Unison mode.
- **Detune:** Introduces and adjusts a tuning spread between the Unison voices.

When Unison is active the Polyphony [p.20] menu in the lower toolbar changes, showing unison voice options from 2-8. This is the number of voices used to create the larger sound.

> ♪ A little bit of Unison Detune can add a lot of fatness to the sound; more of it can create a swarming or even vertigo-inducing character.

5.8.2. Glide

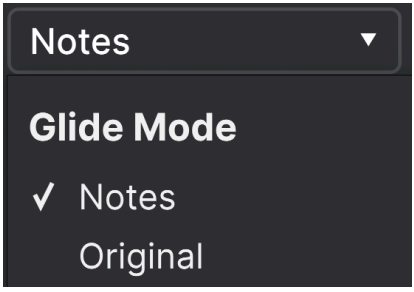
Also called portamento, Glide means that when you play a note, then play another, the pitch will transition through the notes in between, almost like an invisible hand on a very precise pitch ribbon controller.

- **Glide:** Sets the Glide time between notes.
- **Legato:** When active, Glide only occurs on legato playing.

> ♪ *Legato* means playing a new note without fully releasing the previous one. Setting Glide to Legato helps you play expressively when you don't want Glide all of the time. If you want to hear a note come in crisply with no pitch travel, just make sure all prior notes are fully released, then play it.

5.8.2.1. Glide Modes

Glide (portamento) on the original Prophet-VS was actually between *voices*, not notes. Prophet-VS V gives you a choice, which is accessed in the side panel settings [p.22]:



- **Notes:** Prophet-VS V glides between notes as on most synths.
- **Original:** Prophet-VS V glides between voices as on the original hardware.

In Notes mode, the Glide setting ranges from zero to 2 seconds per octave. This means that at a given setting, the pitch will take longer to arrive at a destination note that's farther away from the previous note played.

5.8.3. Spread and Tune

The functions of the final two knobs in the Voice Control section are self-descriptive.

- **Spread:** Adjusts the stereo width of the voice spread, based on the Pan Trimmers [p.66].
- **Tune:** Sets the master tuning of the instrument, from 440 to 480 Hz.

5.9. Main Panel Chorus

Though Prophet-VS V offers two chorus options in the Effects [p.86] section of the Advanced Panel, it also emulates the built-in chorus the original hardware provided.

The controls are simple:

- **On:** Engages or bypasses the Chorus.
- **Rate:** Sets the chorus speed in Hertz.
- **Depth:** Adjusts the amount of chorus.

5.10. The Virtual Keyboard

Like many Arturia instruments, Prophet-VS V features a virtual keyboard for when you need to work with the synth without a controller handy. Its keys also mirror notes played by your fingers (on a controller) or DAW.

Click lower on the keys to produce increased MIDI velocities – though you may not hear any effect unless the Preset has mapped Velocity to a destination.

You can also play using your computer keyboard. The letter keys in the rows beginning with Q and A functioning as black and white keys, respectively. Z and X shift the octave down and up.

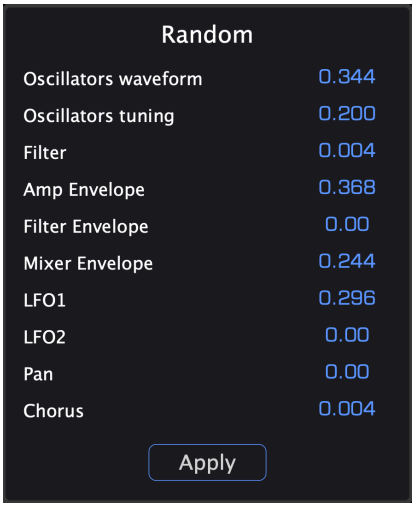
5.10.1. Pitch and Modulation Wheels

The onscreen pitch-bend and modulation wheels should respond to the corresponding controls on your MIDI controller. They are not MIDI-mappable, but instead default to pitch-bend and modulation.

> ! If the modulation wheel onscreen does nothing when you move the wheel (or other control) on your controller, check to see if that control is sending MIDI CC 1. Pitch-bend is a "hardwired" affair that does not use a CC, so it should always work.

5.11. The Random Button

Directly above the master volume slider at the middle-left of the panel is a button marked **Random**. This expands on an original feature *and* expands your creativity, allowing you to add a degree of randomization to ten different parameter groups in Prophet-VS V:



Drag on the numerical fields to set the amount of random factor you would like for each parameter group. When finished, click *Apply*, then click anywhere outside the menu to close it.

5.12. Voice Dispersion

The variation inherent in vintage hardware synthesizer circuits is what gave classic synths much of their character. Too much variation was undesirable, but Voice Dispersion offers a sophisticated way to add just the right amount, going beyond simple detuning or "drift," which in any case would not have been a factor given the digital oscillators of the Prophet-VS. The controls are hidden under a "hatch" at the top center of the window. Click the hatch to reveal them.

Voice Dispersion sets the variation between aspects of each polyphonic synth voice, corresponding to the condition of a hardware unit. There are three preset levels plus a Custom setting.

- **Preset Buttons:** Clicking a button selects a progressively higher level of variance.
    - **1:** Factory.
    - **2:** Aged.
    - **3:** Out of Calibration.
    - **Custom:** Lets you set up a custom condition using the trim pots to the right.
    - **Cutoff:** Controls the variance in the Filter Frequency between voices.
    - **Res.:** Controls the variance in the Filter Resonance between voices.
    - **Pan:** Adds variance in the Pan Trimmer [p.66] (see below).
    - **Amp:** Adds differences in amplifier output level between voices.

5.13. Pan Trimmers

Prophet-VS V also offers precise adjustment over the panning of its individual voices. These controls are hidden under another "hatch" to the right of the Voice Dispersion controls.

Simply adjust each trimmer to pan its corresponding voice left or right in the stereo picture. In addition, the red LED above each trimmer lights up when its voice is in use.

> ♪ If polyphony is set to more than eight voices, then the first (leftmost) trimmer also controls voice 9, the next controls voice 10, and so on.

6. ADVANCED PANEL: ENVELOPES

Prophet-VS V expands upon the capabilities of the original hardware with additional modulation sources and an extensive modulation matrix. These reside in the Advanced panel, accessed by clicking the **Advanced** button at the top right of the Upper Toolbar. A new area of Prophet-VS V will open up. Next, click the **Envelopes** tab followed by the **Mixer** tab.

This area offers very fine-grained control over the behavior of the envelopes.

6.1. The Mixer Tab

Here, we will begin with a deeper look at the Mix Envelope that blends the four digital oscillators. Again, that's like an invisible hand on the oscillator joystick and essentially the home of the *vectors* in "vector synthesis."

This was the heart of the Prophet-VS, and central to its ability to create harmonic motion not possible on analog synths.

Some readers may be thinking, "Isn't that just wavetable synthesis?" Not quite. Wavetable synths like the PPG Wave certainly morphed between digital waveforms, but each waveform was fairly close in shape to its immediate neighbors – the goal being gradual changes as the wavetable position was modulated.

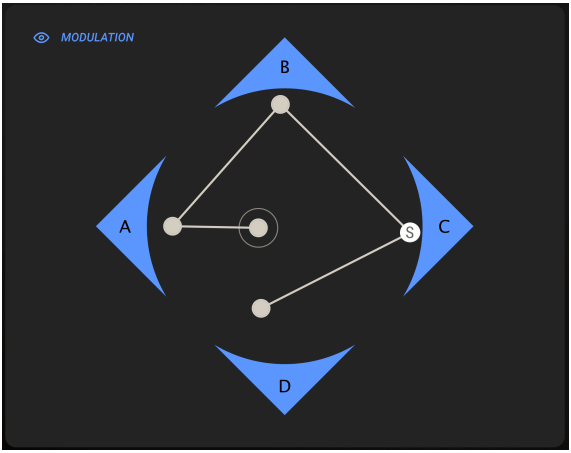
With the Prophet-VS' vector synthesis, the joystick and Mix Envelope made it possible to have very different waveforms in each of the four oscillators but still achieve smooth transitions. What's more, on a wavetable synth, the blend is between two adjacent waveforms at any given instant. On the Prophet-VS, a blend of four waveforms – at differing relative levels – may be heard simultaneously.

6.1.1. Bypass Button

The On/Off icon on the Mixer Tab bypasses the Mixer Envelope without losing any of its settings.

6.1.2. Vector Display

On the left side of the Mixer Tab, there is a larger duplicate of the Mix Envelope display from the main panel. In fact, if you adjust either, its counterpart will mirror your settings.



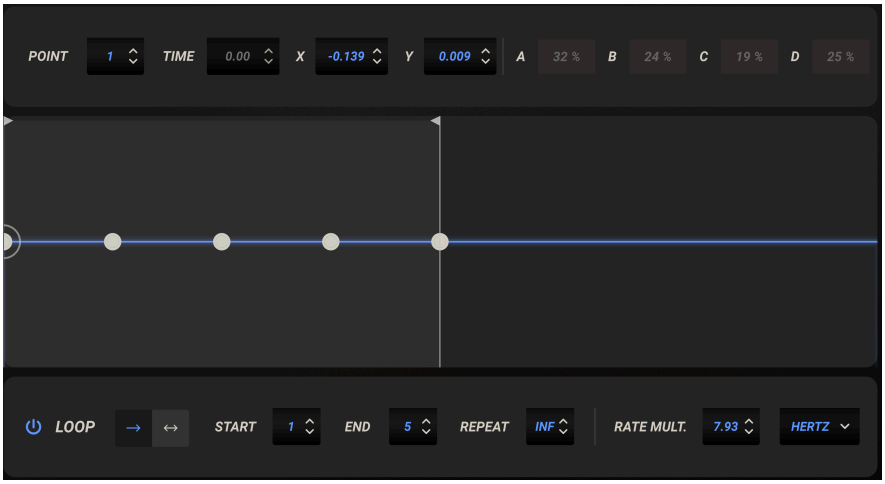
As on the main panel, you can simply adjust the envelope visually; simply click and drag on any breakpoint. Click outside of a breakpoint to add another point (up to five), or right-click on a breakpoint to remove it. The moving "puck" displays the real-time vector position of the Mix Envelope.

- **Modulations:** When this is active, the puck displays the vector (joystick) position as determined by all modulation sources that may be affecting the oscillator blend – not just the Mix Envelope.

The breakpoint marked "**S**" indicates the nominal of the Mix Envelope. As described in the previous chapter [p.56], that's the point at which the envelope pauses in its travel as long as a note is held, then continues when then note is released – unless the Mix Envelope is in Loop Mode. Double-click on a point to specify it as the sustain point.

6.1.3. Mix Envelope Controls

On the right side, you can achieve *much* more precise control over the Mix Envelope by adjusting a single parameter at a time. You might be wondering what a single line with breakpoints along it has to do with the multi-vector display on the left. Simply put, it's there to display and adjust the precise times between breakpoints on the Mix Envelope.



You can also click to add and right-click to remove breakpoints in this display. Dragging them horizontally (the only option) adjusts the time it takes for the envelope to travel from the previous breakpoint to the one you are dragging. (Time is therefore not adjustable for the *first* breakpoint.) There are also individual parameters above the display, all of which are numerical fields in which you drag up or down.

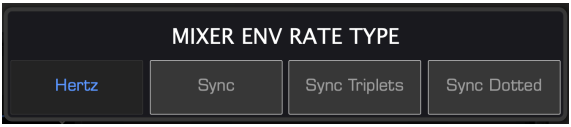
- **Point:** Selects the individual breakpoint you wish to adjust.
- **Time:** Sets the time it takes for the envelope to travel between the previous and selected breakpoints.
- **X:** Sets the horizontal position of the breakpoint in the vector space.
- **Y:** Sets the vertical position of the breakpoint in the vector space.
- **S:** Again, S marks the sustain point. As in the vector display, you can double-click here to specify that point.

The grey fields A, B, C, and D display how far into each oscillator's "zone" the selected breakpoint is located, and will change as you make adjustments to the other parameters.

Why can you adjust the position of the first point on the Vector Display but not here? On the Vector Display, its position indicates the volume blend of the four oscillators. Here, the points are in the time domain, and the first point is by definition always the beginning of the envelope.

6.1.4. Tempo Sync and Rate Multiplier

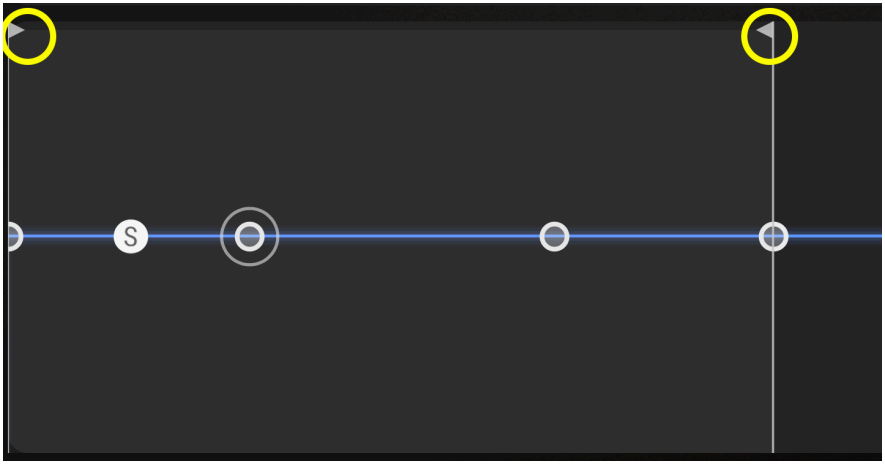
The Mix Envelope can sync to master tempo (in your DAW if Prophet-VS is used as a plug-in; in the Audio MIDI Settings of the main menu [p.14] if played stand-alone).



Binary, Triplet, and Dotted rhythmic feels are available. The **Rate Multiplier** functions as a simple speed control in Hz if the Mix Envelope is unsynced. If synced, its value shows as a multiple or division of one musical bar relative to your master tempo.

6.1.5. Loop Mode

As on the main panel, the Mix Envelope can be made to loop. here, the control is more precise.



When Loop mode is engaged, you can adjust the loop length visually by dragging the "handles" as shown in the image above. Loop start and end points can occur only on envelope breakpoints.

- **On/Off:** Turns Loop mode on and off.
- **Direction:** Sets whether the loop plays forward only, or forward and backward. The latter is available only when the Mixer Envelope is not tempo-synced.
- **Start:** Selects the starting breakpoint for the loop (same as grabbing the left handle).
- **End:** Selects the final breakpoint for the loop (same as grabbing the right handle).
- **Repeat:** Chooses the number of times the loop repeats (1-7, or infinite).

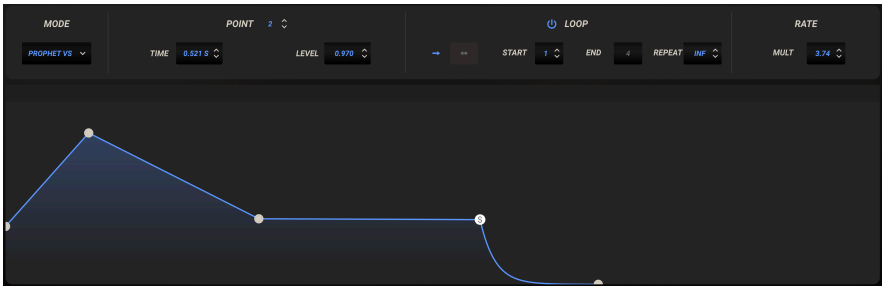
6.1.5.1. Some Details about Loop Behavior

1. With Loop Mode active, new notes will trigger the Mix Envelope from its beginning point.
2. If the notes are held long enough for the envelope to reach the loop start point, the Mix Envelope will then cycle between the loop start and end points until notes are released.
3. Once a note is released, the Mix Envelope will jump to the loop end point.
4. The loop end point is always the same as the sustain point [p.56] in an unlooped envelope.

6.2. Filter Envelope Tab

While in the Envelopes tab of the Advanced Panel, click the Filter subtab to access the Filter Envelope.

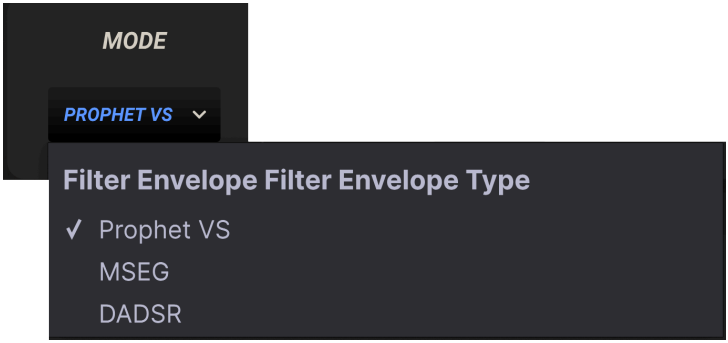
The Filter Tab offers deeper control into Prophet-VS V's filter envelope.



On the graphical display, breakpoints may be dragged in two dimensions as usual, with the X-axis representing time and the Y-axis representing the filter cutoff level.

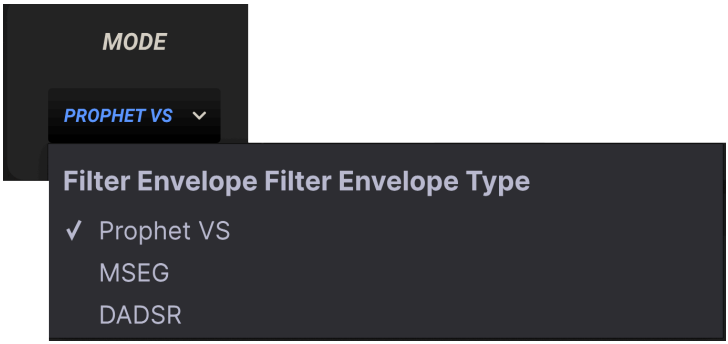
6.2.1. Envelope Mode

Prophet-VS V offers three distinct types of envelopes, selected from the **Mode** drop-down menu. In each, the vertical axis represents the modulation directed at the filter cutoff and the horizontal axis represents time.

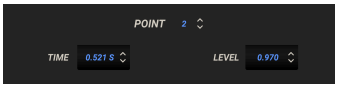


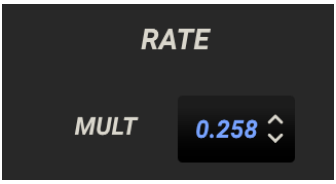
- **Prophet-VS:** The envelope modeled from the original Prophet-VS.
- **MSEG:** A multi-segment envelope in which you can add up to 16 breakpoints.
- **DADSR:** A five-stage envelope: Delay, Attack, Decay, Sustain, and Release.

6.2.1.1. Prophet-VS Envelope Type



The Prophet-VS envelope type is obviously best for staying true to the classic hardware, which its behavior follows precisely. It has five breakpoints and thus four segments, and the first and final points can be set higher than zero on the vertical axis. They can also be precisely adjusted with these controls:

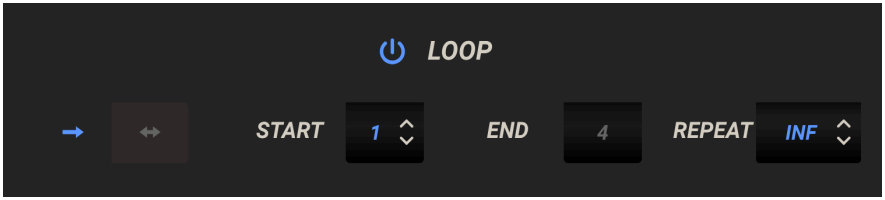




- **Point:** Selects the individual point for adjustment.
- **Time:** Sets the time between the selected point and the previous one (in seconds).
- **Level:** Adjusts the modulation level (i.e. filter cutoff) of the selected breakpoint.
- **Rate:** Changes the overall rate of the envelope by a factor of 0.1x to 10x.

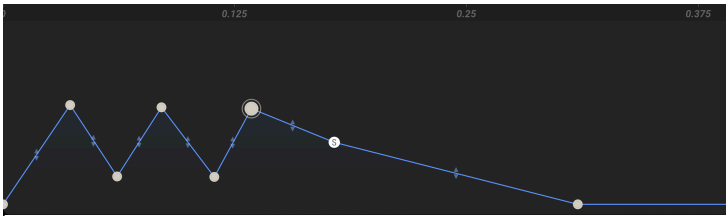
The upper area of the display functions as a ruler. Dragging left or right here will move your view to different segments of the envelope.

The Prophet-VS envelope type can also be made to loop.



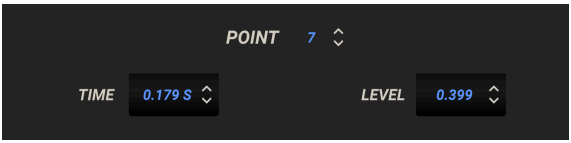
- **On/Off:** Turns Loop mode on and off.
- **Direction:** Sets whether the loop plays forward only, or forward and backward.
- **Start:** Selects the starting breakpoint for the loop.
- **End:** Fixed at point 4 (the sustain point).
- **Repeat:** Chooses the number of times the loop repeats (1-7, or infinite).

6.2.1.2. MSEG Envelope Type



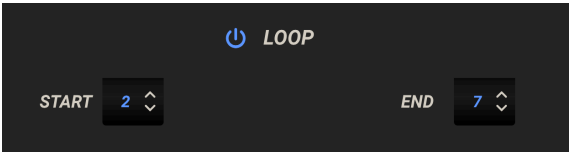
The multi-segment (MSEG) envelope is the only one that allows you to add and remove breakpoints. This lets you create complex, custom shapes for modulating the filter. In the above example image, three attack phases create a "wah wah wah" sound before the envelope settles into its sustain phase.

As with the Prophet-VS envelope type, there are precise controls for selecting and moving the breakpoints:



- **Point:** Selects the individual breakpoint you wish to adjust.
- **Time:** Sets the time it takes for the envelope to travel between the selected breakpoints and the next one (in seconds).
- **Level:** Adjusts the modulation level (i.e. filter cutoff) of the selected breakpoint.

The MSEG envelope type also has a loop mode whose start and end points can be adjusted by dragging on these fields:

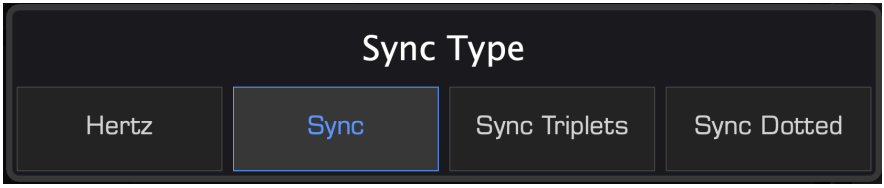


- **On/Off:** Engages or disengages loop mode.
- **Start:** Selects the starting breakpoint for the loop.
- **End:** Selects the ending breakpoint for the loop.

The points can also be adjusted by dragging the handles that appear when Loop mode is turned on, similarly to the Mix Envelope.

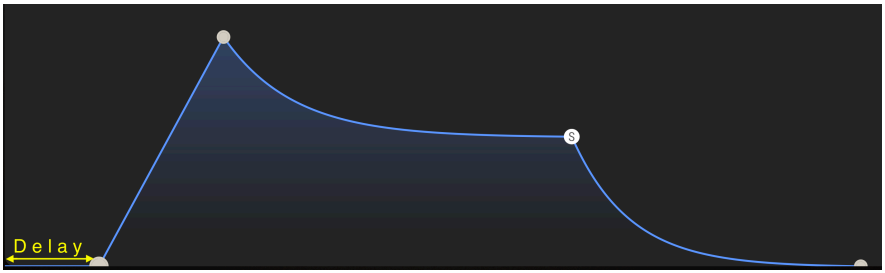
The MSEG envelope also features a time-indexed ruler across the top of the display, expressed in seconds and fractions of seconds.

Last but not least, the MSEG envelope type can free-run or is tempo-syncable with binary, triplet, and dotted rhythmic feels available.



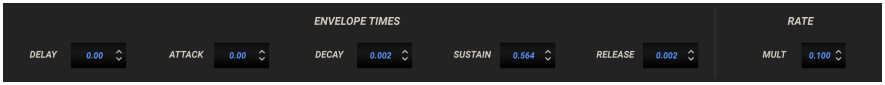
6.2.1.3. DADSR Envelope Type

DADSR (Delay, Attack, Decay, Sustain, Release) refers to a more-or-less traditional ADSR envelope, but with a delay phase tacked onto the beginning.



That means that when a note is played, you can set a time lag until the attack phase begins. This can be useful in situations where, for example, you don't want any filter modulation to occur unless notes are held for a certain length of time.

As with the other envelope types, the points may be adjusted graphically or by dragging in their respective control fields.



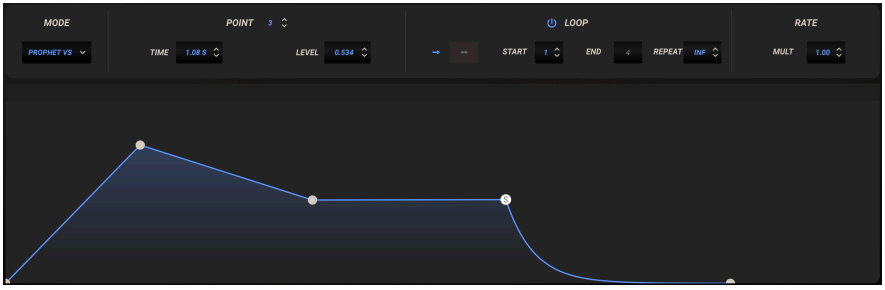
- **Delay:** Adjusts the delay time before the attack phase begins.
- **Attack:** Sets the time it takes for the envelope to reach peak level.
- **Decay:** Adjusts the time for the envelope to fall from peak level to sustain level.
- **Sustain:** Determines the level at which held notes settle after the decay phase.
- **Release:** Sets the time it takes for the envelope to return to zero once notes are released.
- **Rate:** Changes the overall rate of the envelope by a factor of O.1x to 1Ox.

Note that only Sustain is an adjustable level. The other points' levels are fixed. We included this envelope to give users a very simple option akin to tweaking knobs on a hardware synth, but with the added flexibility of the decay phase.

6.3. Amp Envelope Tab

While in the Envelopes tab of the Advanced Panel, click the Amp subtab to access the Amp envelope.

The Amp Envelope controls the volume of the sound over time. Except for this fact, its functionality, controls, and options are identical to the Filter Envelope [p.72]. You may refer to that section for instructions on all operations.



7. ADVANCED PANEL: MODULATIONS

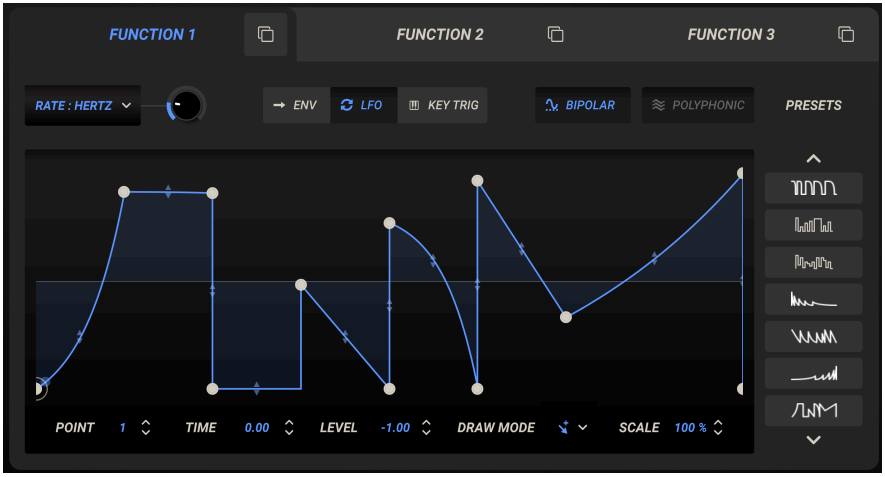
The Modulations tab displays three powerful modulation sources along with a highly flexible modulation matrix. The sources are called Functions [p.79], which are best described as a mad scientist's cross between an LFO and an envelope generator, featuring highly customizable multi-segment patterns.

First though, notice the tab itself and the **On/Off** button located there:

This button enables or bypasses the Modulations section without removing any routings or otherwise losing settings.

7.1. The Functions

The Function generator can be thought of as a highly flexible envelope-meets-LFO. The concept is that you can create any kind of modulation shape you can imagine, then use it to "place a hand" on any parameter(s) you like by assigning one or more destinations in the Modulation Matrix [p.84]. The shape displayed in the function visualizer matches the modulation applied to the destination.

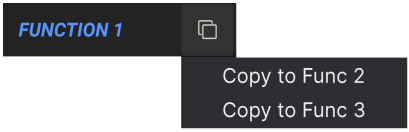


There are three functions available, all of which operate identically.

7.1.1. Function Presets

Before we create our own functions, click on the Presets field to see the factory selections and get an idea of just how many shapes a function can take. Scroll through the four pages of presets (24 presets in total) using the arrows to either side. Clicking on a preset icon will load that function shape into the visualizer.

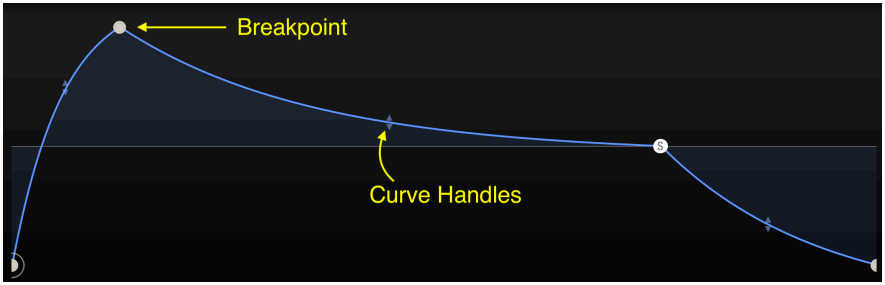
7.1.2. Function Copy



Click the overlapping squares icon to bring up a menu that allows you to copy the selected function – with all its settings – to one of the two other function locations. This is a useful sound design tool for when you want to create variations on the same function without starting from scratch.

7.1.3. Breakpoints

Now it's time to start editing and creating your own functions. Functions are shaped by two factors: *breakpoints* (those little white circles), and the curves (line segments) between them. The X axis represents time and the Y axis represents the amplitude of the modulation signal. We already have some experience with breakpoints from the envelopes, so some of what follows should be familiar.



Click anywhere on the visualizer to add a point. Click again to add another. You can add up to 64 points to the Function.

To delete a point, right-click or control-click it.

! The first and final points cannot be deleted or moved horizontally. They may be moved vertically.

♪ The breakpoint marked with an "S" indicates the nominal sustain level of the Function if used in Envelope mode. Double-click on a point to specify it as the sustain point.

7.1.4. Moving a Breakpoint

To change the location of a point within a Function, click its circle and drag it. You can move it up or down to adjust its level. Drag it to the left or right to change its time within the Function.

Alternately, you can drag on the following fields to select and move breakpoints along one axis without affecting the other:

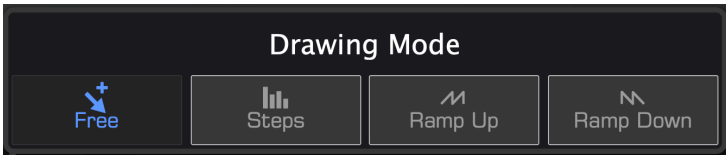
- **Point:** Select individual points on the visualizer.
- **Level:** Moves the selected point along the Y axis.
- **Time:** Moves the selected point along the X axis.

7.1.5. Changing a Curve

Notice that between any two points, in the middle of the lines that connect them, are up/down arrows. Grab one of these "handles" and gradually move it all the way up or down. The line will warp until it reaches its extreme, at which time it will become completely squared off. The steeper the slope, the faster the change!

7.1.6. Drawing Tools

Click on **Draw Mode** to bring up the list of drawing . These can speed up your Function creation by letting you draw repeating shapes via click-dragging inside the visualizer.



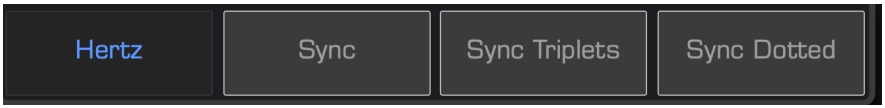
- **Free:** - Creates a single point.
- **Steps:** - Creates a repeating square wave-like pattern.
- **Ramp Up:** - Creates a rising sawtooth pattern.
- **Ramp Down:** - Creates a falling sawtooth pattern.

You must position the mouse in the visualizer so that your cursor becomes a pencil icon, then drag.

To "flatten" all or part of pattern and remove its breakpoints, right-click to make an eraser appear. Then, drag over the region you want to flatten and release.

7.1.7. Function Rate, Amplitude, and Modes

These work not unlike their counterparts in the envelopes. The **Rate** knob sets the Function speed, subject to the now-familiar tempo sync options:



Then, Modes govern how the Function interprets triggers.

The three buttons on the left are mutually exclusive "radio buttons."

- **Env:** The Function plays through once when a note is played, like an envelope. The function rests at the sustain point until notes are released.
- **LFO:** The Function cycles through repeatedly like an LFO, with no sustain point.
- **Key Trig:** Like LFO mode, but the Function begins at the start of its waveform phase every time a new note is played.

Then, there are the Bipolar and Polyphonic options.

- **Bipolar:** When active, the Function sends positive and negative values to its destinations. When inactive, only positive values are sent. A horizontal line appears to indicate the "zero crossing" of the Function.
- **Polyphonic:** When active, modulation of each note played starts at the beginning of the Function's phase. When inactive, notes "join in" on the Function wherever it may be in its cycle.

> ! Polyphonic behavior is only available in **Env** and **Key Trig** modes.

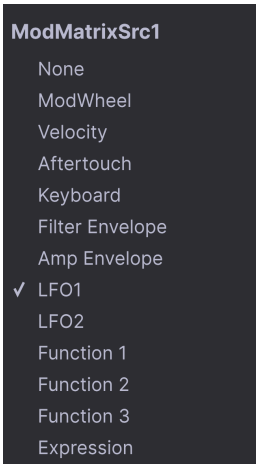
7.2. Modulation Matrix

Prophet-VS V provides a deep and flexible modulation matrix that is also very easy to use.

Its two identical panels (1-8 and 9-16) let you assign modulation routings between eight sources and eight destinations, for a total of 128 possible routings! Sources are arranged vertically along the left side; destinations are listed horizontally across the top.

7.2.1. Assigning a Source

Click on any (abbreviated) source name in the vertical left column to display a menu of modulation sources:



Click on a destination to select it from the list.

7.2.2. Assigning a Destination

Now, click on any destination name across the top to show the massive menu of possible destinations:

Again, simply click to select.

7.2.3. Setting the Modulation Amount

The "cell" where any source and destination intersect is where the intensity of modulation is controlled. Think of the matrix like a giant interactive spreadsheet for modulation (which we think is a lot more fun than accounting).

Drag up or down on the numerical field to set a positive or negative modulation depth. The cell's light blue color will become brighter as you dial in a larger amount in either direction, and is most faded when the value is zero.

Double-click on a cell to remove its modulation routing.

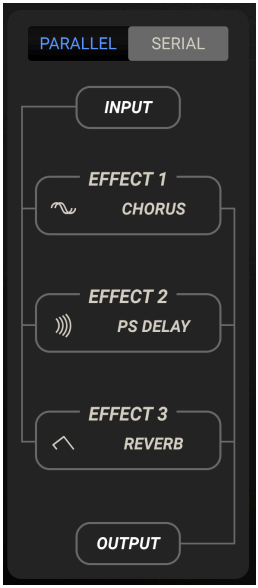
8. ADVANCED PANEL: EFFECTS

Prophet-VS V features a comprehensive selection of effects. If the Advanced Panel is not already open, click the **Advanced** button in the top right of the upper toolbar to open it, then click the **Effects** tab to display this area:

You can use up to three effects at once, in serial or parallel routing, with a choice of the same 16 effects per slot. The above image shows a fully populated effects complement.

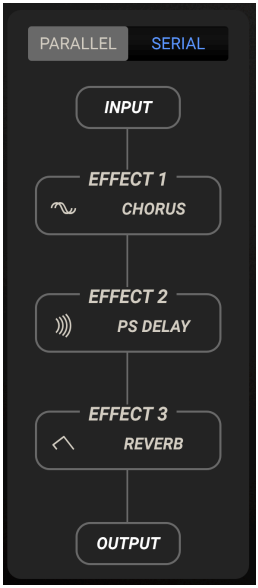
8.1. Effects Routing

This has two options: parallel and serial. In *Parallel* mode, each effect is fed separately by the upstream signal of Prophet-VS V, and in turn feeds its main output separately.



This means that, for the most part, you can adjust one effect without it having a direct, um, *effect* on the other (though this will of course change the overall sound).

In *Serial* mode, the synth engine feeds slot 1, which then feeds slot 2, which then feeds slot 3.



This means that each effect builds on the previous one. So, for example, putting distortion before chorus gives a different result than putting chorus before distortion.

! Be careful with serial routing, as gain from one effect to the next can build up, resulting in overloads.

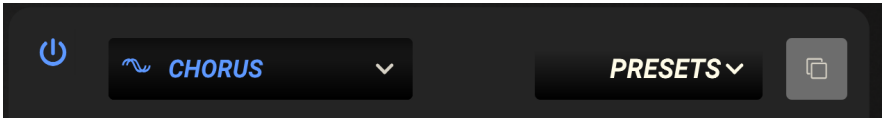
8.2. Common Effects Controls

Let's first have a look at the controls all effects have in common.

8.2.1. Main On/Off Button

Located in the Effects tab itself, this switches all effects on or off simultaneously, without removing your effects from their slots or losing their settings.

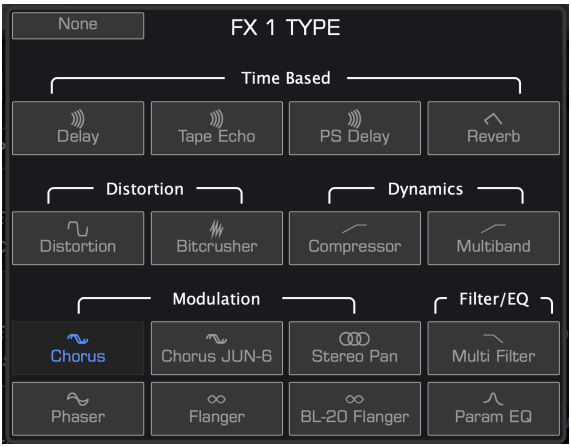
8.2.2. Bypass Buttons



Furthermore, each slot has its own on/off button in its upper right corner. This is useful for bypassing the effect without removing it or losing your settings.

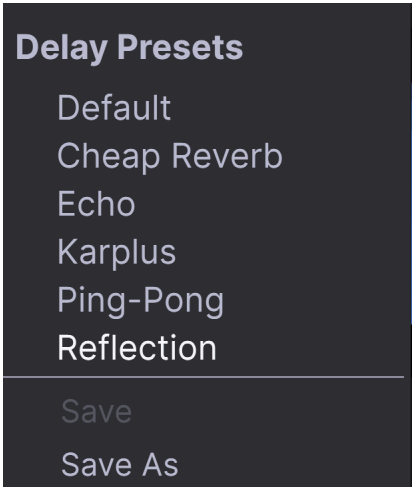
8.2.3. Effect Selection Menu

This menu lets you select from the 16 types for each slot, which are shown here!



8.2.4. Effect Presets

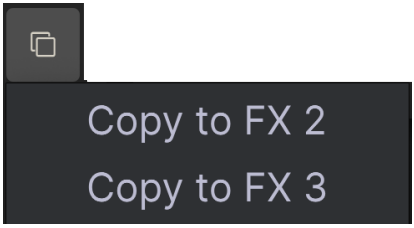
A handful of presets are included with each effect. Click on "Presets" to display the menu and try them. You can also do as "Save As" operation to save your own presets. Factory effects presets cannot be overwritten.



These are "presets within the Preset," meaning the choice is then saved with the overall Preset for the sound. Each effect type has its own optimized presets.

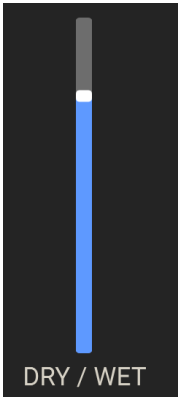
8.2.5. Effect Copy

Click on the overlapping squares icon to copy the selected effect, with all its settings, to one of the other two effects slots.



8.2.6. Dry/Wet Slider

Every effect has a vertical slider at its right side to control the mix of processed and unprocessed signal.



Note that the signal is only "dry" relative to that effect – it may be being processed by others. For the Parametric EQ, the slider scales each EQ band. For the Stereo Panner and Multiband compressor, it adds an amount of the effect.

8.3. Individual Effects Controls

The three effect slots in Prophet-VS V each have a number of parameters.

We encourage you to explore these for yourself, but here follows a list of tables of their individual parameters.

8.3.1. Time-Based Effects

8.3.1.1. Delay

The Delay is tempo-syncable and includes a stereo ping-pong panning mode.

Control	Description
Time	Sets the delay time.
Time Type	Drop-down offers tempo-syncing options. When synced, delay time is a division of host tempo.
Fine	Adds a fine-tuning offset to the delay time, in milliseconds.
Feedback	Sets the amount of delayed signal fed back into the effect for re-processing.
Ping-Pong	Activates stereo ping-pong mode in which delayed signal alternates between the stereo channels.
Stereo Width	Gradually changes the delay from mono to stereo output. Increases the stereo width in ping-pong mode.
HP Freq	Filters low frequencies out of the delayed signal only.
LP Freq	Filters high frequencies out of the delayed signal only.

Note: You can drag vertically on the graphic visualizer to adjust feedback and horizontally to adjust time.

8.3.1.2. Tape Echo

Replicating classic tape echo effects, this effect can also be synced to tempo.

Control	Description
Time	Sets the delay time.
Time Type	Drop-down offers tempo-syncing options. When synced, delay time is a division of host tempo.
Fine	Adds a fine-tuning offset to the delay time, in milliseconds.
Input Vol.	Sets the input gain. High settings may cause distortion.
Intensity	Sets the amount of delayed signal fed back into the effect for re-processing.
Ping-Pong	Activates a stereo ping-pong panning mode.
Width	Adds offset to the delay time between left and right channels. In ping-pong mode, increases the stereo width.

Note: You can drag vertically on the graphic visualizer to adjust intensity and horizontally to adjust time.

8.3.1.3. Pitch-Shift Delay

This tempo-syncable delay can also shift the pitch of the delay taps.

Control	Description
Mode	Drop-down selects normal mode, or modes where the pitch of the delay taps is shifted an octave up or down.
Time	Sets the delay time.
Time Type	Drop-down offers tempo-syncing options. When synced, delay time is a division of host tempo.
Stereo Offset	Introduces a delay time offset between left and right channels.
Feedback	Sets the amount of delayed signal fed back into the effect for re-processing.
Stereo Detune	Introduces tuning variation between left and right channels.
Pitch Shift	Adjusts the amount of pitch-shifting of the delay taps in semitones, up or down.
Spray	Adds randomness to the timing of the delay taps.
HP Freq	Filters low frequencies out of the delayed signal only.
LP Freq	Filters high frequencies out of the delayed signal only.

Note: You can drag vertically on the graphic visualizer to adjust feedback and horizontally to adjust time.

8.3.1.4. Reverb

The built-in reverb lets you set your synth sound in a studio-grade acoustic space without loading a separate plug-in.

Control	Description
Size	Changes the size of the virtual room.
Predelay	Adjusts the delay before early reverb reflections occur.
Decay	Adjusts the time it takes for the reverb tails to die out.
Damping	Increases attenuation of high reverb frequencies before low frequencies.
Stereo Width	Adds stereo width to the reverberated signal.
Input HP	Filters low frequencies out of the input signal (not the processed signal).
Input LP	Filters high frequencies out of the input signal (not the processed signal).

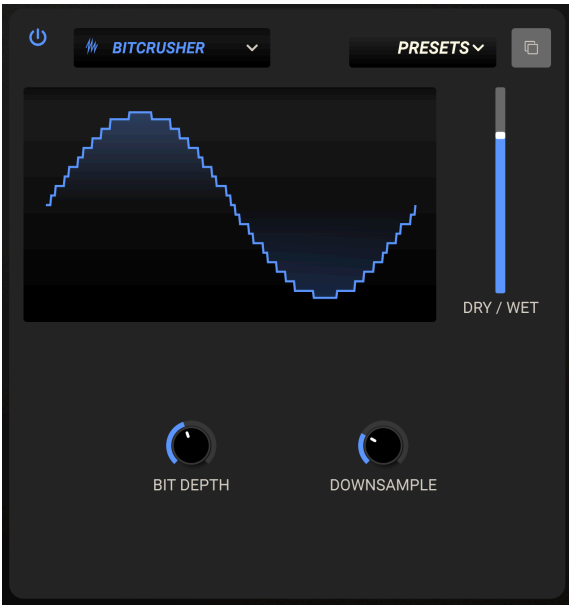
8.3.2. Distortion Effects

8.3.2.1. Distortion

Going far beyond traditional fuzz-box distortion, the one in Prophet-VS V offers 15 algorithms including soft and hard clipping, tape saturation, and all manner of non-traditional waveform mangling. Try them all!

Control	Description
Drive	Equivalent to "pre gain" on an amp or distortion pedal, this sets amount of distortion applied.
Output Gain	Sets the output level of the effect.
Auto	Activates automatic control of the Output parameter to avoid downstream clipping.
Type	Drop-down chooses from 13 different distortion algorithms.
Filter On/Off	Enables or bypasses a built-in filter.
Cutoff	Sets the cutoff or center frequency of the filter.
Resonance	Adjusts a level peak located at the filter frequency.
Filter Mode	Sets the filter to low-, band-, or highpass.
Pre/Post	Decides whether the filter applies before or after the distorted sound.
Dark	Applies an extra 12dB-per-octave lowpass filter at the distortion output.

8.3.2.2. Bitcrusher



This creates lo-fi effects by reducing the bit depth of the signal and/or downsampling it, i.e. resampling it at a lower rate. Want Prophet-V 5 to sound like an '80s sampler or videogame janitor? Crush it!

Control	Description
Bit Depth	Changes the bit depth.
Downsampling	Adjusts the sample rate.

Note: You can also drag vertically on the visualizer to adjust the sample rate and horizontally to change the downsampling.

8.3.3. Dynamics Processors

8.3.3.1. Compressor

A classic compressor with variable ratio, threshold, and makeup gain.

Control	Description
Threshold	Sets the level at which gain reduction starts to occur.
Output Gain	Sets the output level of the compressor.
Makeup	Automates the output level to provide "makeup gain" that compensates for the compression.
Attack	Adjusts how quickly or slowly the compressor "grabs on" to the sound when the threshold is reached.
Release	Adjusts how quickly or slowly the compressor "lets go" of the sound when the level dips below the threshold.
Ratio	Sets the amount of compression applied once the threshold is reached.

8.3.3.2. Multiband

The multi-band compressor in Prophet-VS V lets you apply different amounts of compression and expansion to up to three adjustable frequency bands. You can also turn up to two of the bands on or off. The compression bands across the top of the screen let you reduce the gain of three frequency bands independently. The expansion bands across the bottom are the reverse – they let you boost quiet signals for three different bands.

Control	Description
Threshold	Drag on the top or bottom of edge of a band in the visualizer to change the level at which gain reduction or expansion starts to occur.
Ratio	Drag *inside* a band in the visualizer to change the amount of compression/expansion.
Low On/Off	Enables or disables the low band.
High On/Off	Enables or disables the high band.
Low Band Frequency	Drag to change the upper frequency limit of the low band.
High Band Frequency	Drag to change the lower frequency limit of the high band.
Out Low	Sets the overall output level of the low band.
Out Mid	Sets the overall output level of the mid band.
Out High	Sets the overall output level of the high band.
Input	Adjusts the input gain for all three bands.
Attack	Adjusts how quickly or slowly the compressor "grabs on" to the sound when the threshold is reached.

Control	Description
Release	Adjusts how quickly or slowly the compressor "lets go" of the sound once the level dips below the threshold.
Above/ Below	Drop-down decides whether effect functions as a compressor *and* expander (Above & Below) or just a compressor (Above Only).
Output	Sets the overall output level after compression/expansion.
Amount	Sets the overall amount of compression and expansion.

8.3.4. Modulation Effects

8.3.4.1. Chorus

This is simply a full-featured chorus to thicken up the sound.

Control	Description
Rate	Sets the rate of the chorus LFO.
Depth	Sets the depth of the chorus effect (delay modulation).
Delay	Adds a time offset between the incoming signal and its chorused copies.
Feedback	Sets the amount of chorused signal fed back into the effect for re-processing.
Wave Select	Switches chorus LFO between sine and square waves.
Mono/Stereo	Switches between stereo and mono modes.
Voices	Sets the number of detuned voices used to create the chorus: 1, 2, or 3.

8.3.4.2. Chorus JUN-6

The famously fat chorus of a certain series of six-voice polysynths is one of the things that makes them sought after today. Now, you can apply it to the sound of the Prophet-VS.

Control	Description
Rate	Adjusts the speed of the chorus.
Rate Time	Selects whether the rate or synced as a division of host tempo.
Depth	Changes the amount of the chorus effect.
Phase	Adds a phase offset between copies of the delayed signal.

8.3.4.3. Stereo Pan

This moves the signal from right to left in the stereo picture, using a simple LFO. It can move slightly or widely, and has a few cool tricks up its sleeve.

Control	Description
Rate	Sets the rate of the panning effect.
Rate Type	Selects whether the panning free-runs in Hz or is synced to master tempo.
Mono Bass	When active, frequencies below a certain cutoff are not panned.
Cutoff	Sets the cutoff frequency for use when Mono Bass is active.
Natural/ Linear	In Natural mode, you hear a balance of the unpanned and panned signal. In Linear mode, you hear the panned signal only.
Amount	Adjusts the width of panning from the center.

The Mono Bass function is useful for letting lower frequencies act as an anchor by remaining in the center, while higher frequencies are panned for sonic interest.

8.3.4.4. Phaser

The signature "whoosh" of analog string machines and yacht-rock electric pianos came from shifting the phase of a signal, recombining it with the unaffected sound, then modulating the result on a sweep through the frequency spectrum.

Control	Description
Rate	Controls the speed of the LFO modulating the phaser filter frequency.
Rate Type	Sets whether this LFO free-runs in Hz or is synced to tempo.
Frequency	Changes the harmonic center of the phaser effect.
Feedback	Controls the amount of processed signal fed back into the phaser, which adds resonance.
LFO Amount	Determines the depth of the modulation effect.
LFO Wave	Drop-down in visualizer selects one of six waveforms for the LFO.
N Poles	Determines the steepness of the filter frequency response.
Stereo	Gradually changes the phaser from mono to stereo output.

Note: Drag vertically on the visualizer to change the feedback and horizontally to change the frequency.

8.3.4.5. Flanger

The flanger is the classic "jet engine" effect that can be heard on many rock and electronic music recordings. This was accomplished by modulating the time of a delayed signal with an LFO.

Control	Description
Rate	Sets the rate of the flanger LFO.
Rate Type	Drop-down offers tempo-syncing options. When synced, flanger LFO rate is a division of host tempo.
Delay	Adjusts the length of the inherent delay, which changes the harmonic content.
Depth	Sets the depth of the delay modulation.
Feedback	Sets the amount of effected signal fed back into the effect for re-processing.
+/-	Icon on visualizer toggles between additive and subtractive character for feedback loop.
Wave Select	Icon on visualizer selects sine or triangle wave for modulation shape.
Mono/ Stereo	Switches between stereo and mono modes.
HP Freq	Filters low frequencies out of the flanged signal only.
LP Freq	Filters high frequencies out of the flanged signal only.

8.3.4.6. BL-20 Flanger

This effect emulates the sound of the Bel BF-20, a rare flanger from the 1970s. This was accomplished by delaying the signal, then modulating it with an LFO, then combining it with the original signal.

Control	Description
Rate	Sets the rate of the LFO that modulates the delayed signal.
Rate Time	Drop-down selects whether the rate is in absolute Hz or syncs to master tempo.
Depth	Adjusts the depth of the LFO that modulates the delayed signal.
Delay	Adjusts the audible depth of the flanger effect.
Feedback	Sets the amount of processed signal feeding back into the flanger.
Wide	Provides a wider stereo image by inverting the phase of the LFO modulating the right channel
Mono Input	Optimizes the flanger for a mono input signal.

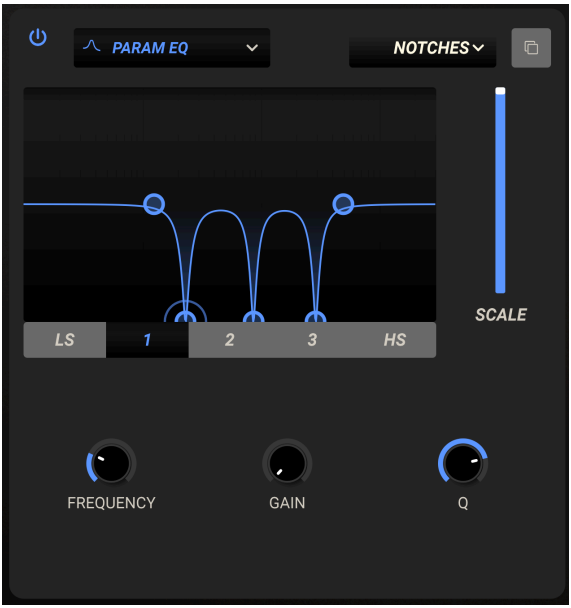
8.3.5. Filter and EQ Effects

8.3.5.1. Multi-Filter

This synthesizer-style filter features highpass, bandpass, lowpass, and two comb modes: feedback and feedforward.

Control	Description
Frequency	Determines the cutoff or center frequency of the filter.
Resonance	Adjusts a level peak located at the filter frequency.
Slope	Sets the filter curve at 12, 24, or 36dB per octave.
Mode (drop-down)	Selects the filter mode. Comb filters do not have slopes.

8.3.5.2. Param EQ



An equalizer (EQ) cuts or boosts frequencies. A parametric EQ lets you adjust the range affected by its frequency bands (the bandwidth or Q) as well as the center frequencies of the bands themselves.

Control	Description
Band Select	Selects a frequency band.
Frequency	Adjusts the center frequency of the selected band.
Gain	Sets the cut or boost amount of the selected band.
Q	Adjusts the width of the selected band around the center frequency.
Scale	Scales the overall amount of EQ applied.

The circles in the visualizer may be dragged around, which adjusts the frequency and the gain of the selected band at the same time. You can also select a particular EQ band by clicking on its tab below the visualizer.

9. SOFTWARE LICENSE AGREEMENT

In consideration of payment of the Licensee fee, which is a portion of the price you paid, Arturia, as Licensor, grants to you (referred to as 'Licensee' from now on) a non-exclusive right to use this copy of the SOFTWARE.

All intellectual property rights in the software belong to Arturia SA (referred to as 'Arturia' from now on). Arturia permits you to only copy, download, install and use the software in accordance with the terms and conditions of this Agreement.

The product contains product activation for protection against unlawful copying. The OEM software can be used only following registration. Internet access is required for the activation process.

The terms and conditions for use of the software by you, the consumer, appear below. By installing the software on your computer, you agree to these terms and conditions. Please read the following text carefully in its entirety. If you do not approve of these terms and conditions, you should not install this software and you should proceed to return it back to where you purchased it immediately or within 30 days at the latest, in return for a refund of the purchase price. Your return must include all written materials, all packaging in an undamaged state, and the enclosed hardware.

1. Software Ownership Arturia shall retain full and complete title to the SOFTWARE recorded on the enclosed disks and all subsequent copies of the SOFTWARE, regardless of the media or form in which the original disks or copies may exist. The License is not a sale of the original SOFTWARE.

2. Grant of License Arturia grants you a non-exclusive license for the use of the software according to the terms and conditions of this Agreement. You may not lease, loan or sub-license the software.

The use of the software within a network where there is a possibility of simultaneous multiple use of the program, is **illegal**.

You are entitled to make a backup copy of the software to be used for none other than storage purposes.

You do not have a right to use the software further than within the limited rights as specified in this Agreement. Arturia reserves all rights not expressly granted.

3. Software Activation Arturia may use a compulsory activation of the software and a compulsory registration of the OEM software for license control to protect the software against unlawful copying. If you do not click to accept the terms and conditions of this Agreement, the software will not work.

In that case, the product including the software may only be returned within 30 days following the purchase of the product. Upon return, a claim according to § 11 shall not apply.

4. Support, Upgrades and Updates after Product Registration You can only receive support, upgrades and updates following your product registration. Support is provided only for the current version and for the previous version only for one year after publication of the newer version. Arturia can modify and partly or completely adjust the nature of the support (hotline, forum on the website, etc.), upgrades and updates at any time.

The product registration is possible during the activation process or at any later time via the Internet. During this process, you will be asked to agree to the storage and use of your personal data (name, address, contact, email address and license data) for the purposes specified above. Arturia may also forward these data to third parties, in particular its distributors, for support purposes and for verifying the right to an upgrade or an update.

5. Unbundling Prohibited The software typically contains a variety of different files which ensure the complete functionality of the software in its default configuration. The software may be used as one product only. It is not required that you use or install all components of the software.

You must not arrange components of the software in a new way and develop a modified version of the software or a new product as a result. The configuration of the software is not to be modified for the purpose of distribution, assignment or resale.

6. Assignment of Rights You may assign all your rights to use the software to another person only if: (a) you assign to the other person the following: (i) this Agreement, and (ii) the software or hardware provided with the software, subsequently packed or preinstalled, including all copies, upgrades, updates, backup copies and previous versions, which granted a right to an update or upgrade on this software, (b) you do not retain upgrades, updates, backup copies and previous versions of this software, and (c) the recipient accepts the terms and conditions of this Agreement as well as other regulations according to which you acquired a valid software license.

A return of the product due to a failure to accept the terms and conditions of this Agreement, e.g. the product activation, shall not be possible upon this re-assignment of rights.

7. Upgrades and Updates You must have a valid license for a previous or more inferior version of the software in order to be allowed to use a software upgrade or update. Upon transferring this previous or more inferior version of the software to third parties, the right to use the software upgrade or update will not apply.

The acquisition of an upgrade or update does not in itself follow a right to use the software.

The right for support on a previous or inferior version of the software expires upon the installation of an upgrade or update.

8. Limited Warranty Arturia warrants that the disks on which the software is provided on is free from defects in materials and workmanship under normal use for a period of thirty (30) days from the date of purchase. Your receipt serves as evidence of the date of your purchase. Any implied warranties on the software are limited to thirty (30) days from the date of purchase. Some states do not allow limitations on duration of an implied warranty, so the above limitation may not apply to you. All programs and accompanying materials are provided 'as is' without warranty of any kind. The complete risk as to the quality and performance of the programs is with you. Should the program prove defective, you assume the entire cost of all necessary servicing, repair or correction.

9. Remedies Arturia's entire liability and your exclusive remedy shall be at Arturia's option either: (a) return of the purchase price, or (b) replacement of the disk that does not meet the Limited Warranty and which is returned to Arturia with a copy of your receipt. This limited Warranty becomes void if failure of the software has resulted from an accident, abuse, modification, or misapplication. Any replacement software will be warranted for the remainder of the original warranty period or thirty (30) days, or whichever option is longer.

10. No Other Warranties The above warranties are in lieu of all other warranties, expressed or implied, including but not limited to the implied warranties of the commercial value and fitness for a particular purpose. No oral or written information or advice given by Arturia, its dealers, distributors, agents or employees shall create a warranty or in any way increase the scope of this limited warranty.

11. No Liability for Consequential Damages Neither Arturia nor anyone else involved in the creation, production, or delivery of this product shall be liable for any direct, indirect, consequential, or incidental damages arising from the use of or inability to use this product (including without limitation, damages for loss of business profits, business interruption, loss of business information and the like) even if Arturia was previously advised of the possibility of such damages. Some states do not allow limitations on the length of an implied warranty or the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.