

**USER MANUAL**

**\_AUGMENTED STRINGS**

**ARTURIA**

\_The sound explorers

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**Product version: 1.1.0**

***Revision date: 10 May 2022***

# Thank you for purchasing Arturia Augmented STRINGS!

This manual covers the features and operation of Augmented STRINGS.

**Be sure to register your software as soon as possible!** When you purchased Augmented STRINGS you were sent a serial number and an unlock code by e-mail and/or the [Arturia Downloads & Manuals](#). These are required during the online registration process.

## Special Messages

### Specifications Subject to Change:

The information contained in this manual is believed to be 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 level or at a level that is uncomfortable. If you encounter any hearing loss or ringing in the ears, you should consult an audiologist.



# Introduction

## **Congratulations on your purchase of Arturia Augmented STRINGS**

Augmented STRINGS incorporates rich multi-sampled string sounds with state-of-the-art synthesis combining them in an approachable, exciting software instrument. This will give modern producers immediate access to a comprehensive range of authentic, abstract, and evocative string sounds.

Be sure to visit the [www.arturia.com](http://www.arturia.com) website for information on all our other inspiring hardware and software instruments, effects, MIDI controllers, and more. They have become indispensable tools for many visionary artists around the globe.

Musically yours,

**The Arturia Team**

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# 1. WELCOME TO AUGMENTED STRINGS

Augmented STRINGS will provide you with the most comprehensive string palette for any project. With the intuitive preset browser you'll be inspired with everything from traditional classical ensembles all the way to modern contemporary sounds. But don't stop there, using the provided macros you can push and tweak the presets and get excellent results, with the minimum of fuss.

## 1.1. Augmented STRINGS sound engine

At the heart of this Hybrid instrument is a set of high quality string libraries, taken from various classical stringed instruments and ensembles.

The synthesizer engine used in Augmented STRINGS, offers everything from Virtual Analogue to Wavetable, through Granular and Harmonic to ensure you have enough sound sculpting tools for any sound design. On the face of it, the interface is very simplistic, with just a few macro controls. However, step into the "Advanced" area to fully take charge of your sound exploration and create complex and evocative timbres, ready for whatever your project needs.

## 1.2. Features

- Hybrid synthesizer featuring two separate sound engines
  - Each Layer can be comprised of a mixture of these Engines.
  - Each Engine can contain a multisample or a synth Engine (Virtual Analogue, Wavetable, Granular & Harmonic methods of synthesis)
  - You can go up to 2 synth Engines, and 2 multisample Engines at the same time
  - Blend Layers and modify various parameters using the Morph macro
  - 8 Macros giving you single knob control for Colour, Time, Movement & Morph with 4 dedicated to FX
  - Two separate Multi-effects inserts per layer
  - Delay & Reverb on the master bus, for overall effect

## 2. ACTIVATION AND FIRST START

Augmented STRINGS works on computers equipped with Windows 8 or later and macOS 10.13 or later. You can use the instrument in standalone mode or as an Audio Unit, AAX, VST2, or VST3 instrument inside your Digital Audio Workstation (DAW) software.



### 2.1. Activate the Augmented STRINGS license

Once Augmented STRINGS has been installed, the next step is to activate your license for the instrument. This is a simple process that is done through a separate program called the Arturia Software Center.

#### 2.1.1. The Arturia Software Center [ASC]

If you have not already installed the ASC, you can do so by going here: [Arturia Downloads & Manuals](#).

Look for the Arturia Software Center at the top of the page, and then download the version of the installer that you need for your system (macOS or Windows).

Once the software is installed:

- Launch the Arturia Software Center (ASC).
- Log into your Arturia account.
- Scroll down to the My Products section of the ASC.
- Click the Activate button and follow the instructions.

That's it!

### 2.2. Augmented STRINGS as a plug-in

Augmented STRINGS comes in VST, Audio Unit (AU) and AAX plug-in formats for use in all major DAW software such as Ableton Live, Cubase, Logic, Pro Tools, Studio One, and more. When using Augmented STRINGS as a plug-in, all audio and MIDI device settings are handled by the host music software. Please refer to your host music software's documentation if you have any questions about loading or using plug-ins.

Note that when you load Augmented STRINGS as a plug-in instrument inside your host software, its interface and settings work the same way as in standalone mode, with a few small differences:

- Augmented STRINGS will synchronize to your DAW's host tempo/bpm rate, when tempo is a factor
- You can automate numerous parameters using your DAW's automation system
- You can use more than one instance of Augmented STRINGS in a DAW project (in standalone mode you can only launch one instance of Augmented STRINGS)
- You can run the output of Augmented STRINGS through any additional audio effects available to your DAW such as delay, chorus, filters, etc.
- You can route Augmented STRINGS's audio outputs more creatively inside your DAW using the DAW's own audio routing system.

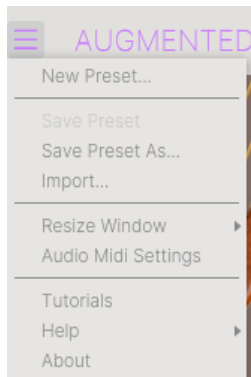
## 2.3. Initial setup for Standalone Use

If you would like to use Augmented STRINGS in standalone mode, you will need to set up your instrument and ensure that MIDI and audio signals are flowing properly through the software. You generally only need to do this one time unless you make major changes to your computer. The setup process is the same on both Windows and macOS computers.

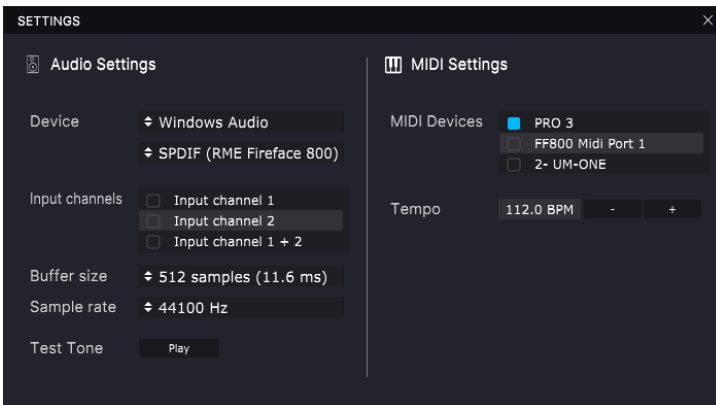
**i** ! This section only applies to readers that plan to use Augmented STRINGS in standalone mode. If you are only going to use Augmented STRINGS as a plug-in inside a host music software, you can safely ignore this section (your host music software handles these things).

### 2.3.1. Audio and MIDI settings

At the top left of Augmented STRINGS is a pull-down menu. Click it to reveal the following:



Select **Audio MIDI Settings** to bring up the following window. Note that this menu is only available when using Augmented STRINGS in Standalone mode:



Starting from the top we have the following options:

- **Device** selects which audio driver and device will handle playback of Augmented STRINGS. This can be your computer's internal driver, or an external soundcard driver. The name of your hardware interface may appear in the field below depending on your selection.



♪ On macOS devices, including external audio interfaces, use the built-in CoreAudio driver. The device can be selected from the second menu.

- **Output Channels** lets you select which of the available device outputs will be used for playback. If your selected device only has one stereo output, then only one option will appear here; If your device has more than two outputs, then you can select a specific pair of outputs.
- **Buffer Size** menu lets you select the size of the audio buffer your computer uses to calculate sound.



♪ A larger buffer means a lower CPU load as the computer has longer periods of time to process commands and fewer interruptions, but this can result in a noticeable latency between a key-press and hearing a result (an obvious problem when playing an instrument). 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 easily be able to operate at low sample buffer sizes (256 or 128 samples) without audio glitches. However, if you do hear clicks, pops, or artifacts, try increasing the buffer size until you have smooth playback without any glitches. The latency time is displayed in milliseconds on the right-hand side of this menu.

- **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 Augmented STRINGS. Higher sample rates place greater loads on the CPU so we recommend staying at 44.1 or 48 kHz unless you have a specific requirement to work at high sample rates.

- **Show Control Panel** button will jump to the system control panel for whatever audio device is selected.



♪ Note that this button is only available in the Windows version.

- **Play Test Tone** plays a simple test tone to help you troubleshoot audio issues. You can use this feature to confirm that the instrument is routed correctly through your audio interface and audio is playing back where you expect to hear it (your speakers or headphones, for example).
- Your connected MIDI devices will appear in the **MIDI Devices** 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 Augmented STRINGS from multiple controllers.
- **Tempo** sets the tempo of the Augmented STRINGS sequencer. When using Augmented STRINGS inside a host music software as a plug-in, the instrument gets tempo information from your host software.

## 2.4. Taking Augmented STRINGS for a Test Drive

Now that you have Augmented STRINGS up and running, let's take it for a quick test drive!

If you haven't done so already, launch Augmented STRINGS as a plug-in or as a standalone instrument. If you have a MIDI controller set up, use it to play some notes on Augmented STRINGS.

The Left and Right arrows at the top of the instrument let you step through all of Augmented STRINGS's available presets. Try playing a few and when you find one that you like, try adjusting some of the other on-screen controls to see how it affects the sound.

Play freely with the controls – nothing is saved unless you specifically save a preset (described later in this User Guide), so there is no chance of messing up any of Augmented STRINGS's factory presets.

At this point, we can wrap up the installation and test drive. We hope you have gotten off to a smooth start. The rest of this guide will help you work your way through all of the Augmented STRINGS features. By the time you reach the end, we hope you'll be using the instrument to create fantastic music!



## 3. THE USER INTERFACE

This chapter will give you an idea of how Augmented STRINGS is organized and where to find things.

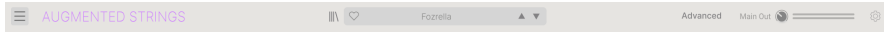
### 3.1. High-Level Overview



Augmented STRINGS is neatly subdivided into three sections as shown in the illustration above.

1. **The Upper Toolbar [p.9]:** This is where you handle administrative tasks such as saving, loading and browsing presets, editing various setup and configuration parameters, adjusting MIDI mappings and accessing the Advanced features of Augmented STRINGS. We will go over the Toolbar in the next section of this chapter.
2. **The Main Panel:** This is where you access the macro controls which allow you to edit your sounds. We will go over this panel in the [Main Panel And Features \[p.30\]](#) section of this guide.
3. **The Lower Toolbar [p.13]:** This section provides quick access to a number of important parameters and useful bits of information such as CPU usage, Undo & Redo History. We will go over the Lower Toolbar at the end of this chapter.

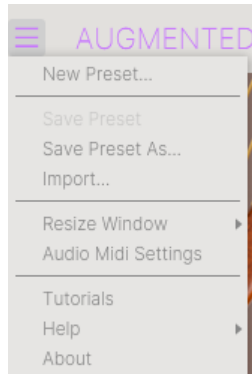
## 3.2. The Upper Toolbar



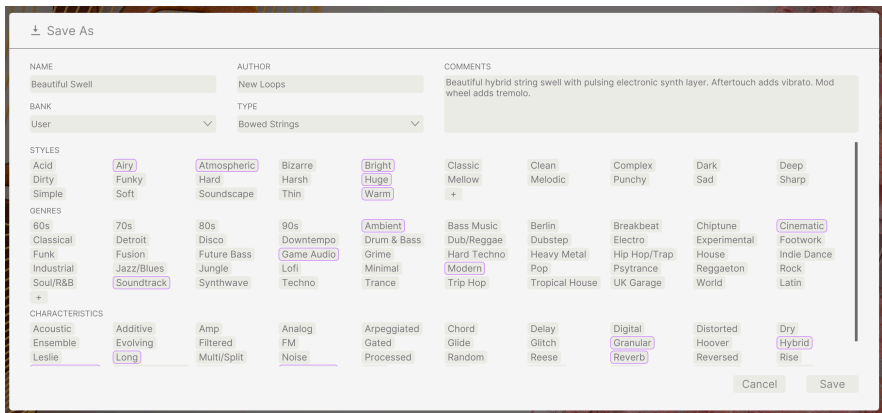
The toolbar that runs along the top of the instrument provides access to many useful features including the Augmented STRINGS menu, preset browsing features, various MIDI mapping and dive into the depths of the engine with the Advanced features.

### 3.2.1. The Augmented STRINGS menu

Clicking the Augmented STRINGS box at the top-left corner opens a pull-down menu and lets you access nine important features.



- **New Preset:** This option 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:** This option will overwrite the currently loaded preset with any changes you have made. If you would like to save the current preset under a different name, use the "Save As..." option below.
- **Save Preset As...** This lets you save your preset under a different name. Clicking this option reveals a window where you can name your preset and enter information about it.



**i** 🎵 Arturia's powerful browsing system lets you save much more than just a preset name. For example, you can enter the Author's name, select a Bank and Type, select tags that describe the sound, and even create your own Bank, Type, and Characteristics. This information can be read by the preset browser and is useful for searching the presets banks later. You can even enter freeform text comments in the Comments field, which is handy for providing a more detailed description of a sound. This can help you remember a sound or to provide context to other Augmented STRINGS users with which you are collaborating.

- **Import:** This command lets you import a preset file, which can be either a single preset or an entire bank of presets.
- **Export Menu:** You can export presets in two ways: as a single preset or as a bank.
  - **Export Preset:** Exporting a single preset is handy when you want to share 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 Preset* 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 be reloaded using the *Import Preset* menu option.
- **Resize Window:** The Augmented STRINGS 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. The controls work the same at any zoom level but smaller controls can be easier to see at higher magnification levels.

**i** 🎵 While working with Augmented STRINGS, 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 MIDI Settings (only available in stand-alone mode):** Here you manage the way the instrument transmits audio and receives MIDI. See the section Audio and MIDI settings for more information about this topic.

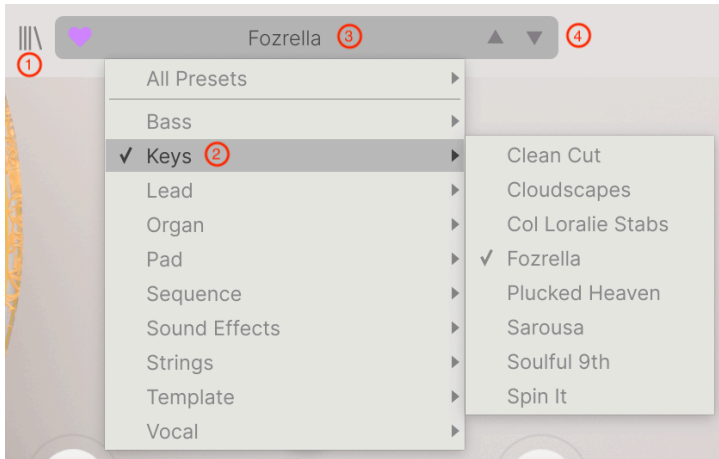


! The Audio MIDI Settings menu is only available in when using Augmented STRINGS in Standalone mode. When using Augmented STRINGS as a plugin, the host software handles all of the parameters in this menu including audio and MIDI routing, buffer size settings, and more.

- **Tutorials:** Augmented STRINGS comes with tutorials that walk you through different features of the instrument. Select one of the tutorials to get step-by-step descriptions of how to make the most of the Augmented STRINGS features.
- **Help:** This section provides handy links to the Augmented STRINGS User Guide and the Augmented STRINGS Frequently Asked Questions page on Arturia's website. Note that accessing these pages will require an Internet connection.
- **About:** Here you can view the Augmented STRINGS software version and developer credits. Click the About window again to close it.

### 3.2.2. Browsing Presets

Augmented STRINGS comes with lots of great-sounding factory presets. To help you search through large numbers of presets, we have a powerful preset browser with a number of features to help you find sounds quickly.



The browsing features of the Toolbar (shown above) include the following:

1. The **Preset Browser Button** (four-lines icon) opens and closes the preset browser. This is covered in detail in the next chapter, [The Preset Browser \[p.21\]](#).
2. The **Preset Filter** Choose between "All Presets" or select one of the categories pictured. You can filter in a more granular way using the Preset Browser, explained later.
3. 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.
4. The **Arrow icons** 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. This means you can use buttons on your MIDI Controller to easily step through the available presets without having to use the mouse at all.

### 3.2.3. Advanced panel button



Clicking "Advanced" lifts the hood of Augmented STRINGS and allows us to delve deeper into the sound and design of our patches. You can learn more in the [dedicated chapter \[p.32\]](#).

### 3.2.4. Side Panel Settings



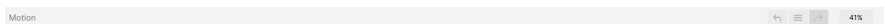
At the far right of the Toolbar, a gear-shaped icon opens up a panel on the right side, containing four tabs:

- **Settings:** Global settings (MIDI receive channel) and Preset settings including number of polyphonic voices, voice assign, bend range, glide time & mode and MPE settings.
- **MIDI:** MIDI Learn functions for use with external controllers.
- **Tutorials:** In-app interactive tutorials, also accessed from the main menu.

These topics are covered in the [Side Panel \[p.14\]](#) section later in this chapter.

## 3.3. The Lower Toolbar

The Lower Toolbar runs along the bottom of the Augmented STRINGS user interface and provides quick access to several important parameters and useful bits of information.



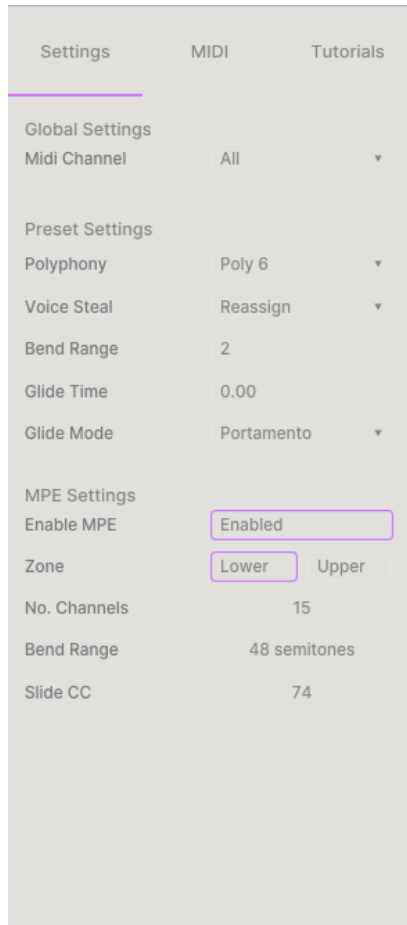
- **1. Parameter Name:** Displays the name of the parameter as you adjust or hover on controls. The current value of the control is listed in a tool tip that appears next to the control.
- **2. Undo/Redo:** Keeps track of your edits and changes.
  - **Undo (left arrow):** Undoes the last change in Augmented STRINGS.
  - **Redo (right arrow):** Redoes the last change in Augmented STRINGS.
  - **Undo History (center menu icon):** Displays a list of recent changes. Click on a change to restore the patch to that state. This can be useful in the event you happened to go too far in your sound design and want to revert to an earlier version.
- **3. CPU Meter and Panic Button:** Displays the current CPU usage of the instrument. Clicking on the CPU will send a MIDI panic, silencing all notes resetting MIDI signals in the event of stuck notes or other issues.

## 3.4. The Side Panel

The icon shaped like a gear at the upper right corner accesses global MIDI channel settings, a powerful MIDI Learn mode and Tutorials.

### 3.4.1. Settings Tab

Click **Settings** to access global settings like MIDI channel and MPE (MIDI Polyphonic Expression).



#### Global Settings

- **MIDI Channel:** Selects the MIDI channel(s) on which Augmented STRINGS will receive MIDI input. You can select ALL (omni) or channels 1-16.

## Preset Settings

- **Polyphony** Select monophonic all the way to 16 note polyphony
- **Voice Steal** Choose Reassign or Rotate mode
- **Bend Mode** Select range from 1 semitone all the way up to 3 octaves.
- **Glide time** Choose your Glide time, up to 10 seconds
- **Glide mode** Select Portamento or Legato for your glide type.

**MIDI Polyphonic Expression:** Augmented STRINGS supports MIDI Polyphonic Expression (MPE). This exciting addition to the MIDI protocol allows a multi-dimensional controller to send polyphonic expressive controls (like pitch-bend, aftertouch, or your finger location on the Y axis of a key) on a per-note basis. This is done by using separate MIDI Channels to carry each note's expressive data separately, that can then be parsed by synthesizers like Augmented STRINGS. When MPE is enabled, modulation is displayed in the strip at the bottom of the "Advanced" panel, in the keyboard modulation settings.

The controls in the above menu let you set the following:

- **Enable MPE:** Turns MIDI Polyphonic Expression mode on and off.
- **Zone:** If an MPE-capable controller can be split into lower and upper zones, this selects which zone sends the MPE messages.
- **No. Channels:** Sets the maximum number of MIDI sidechannels (and therefore simultaneous notes) on which MPE messages may be sent.
- **Bend Range:** Sets the maximum pitch bend range of each note, up to 96 semitones (48 by default). This should be set to the same value as what is used on your hardware MPE controller.
- **Slide CC:** Select the MIDI CC number used to send the slide information. By default, this is 74 but you can change it. Note that when MPE is enabled, all the controls that listen to the selected CC will no longer receive it



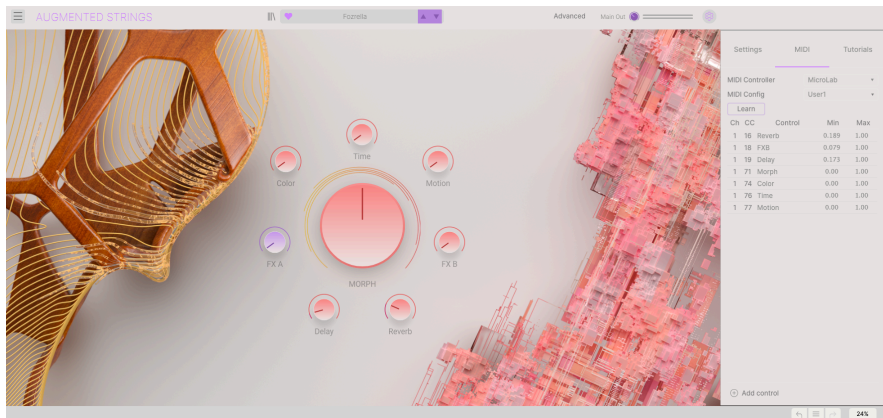
### 3.4.2. MIDI Tab

This is where Augmented STRINGS may be placed in MIDI Learn mode. In this mode, all MIDI-assignable parameters are highlighted and you can map physical controls on your MIDI Controller to them. A typical example might be to map a mod wheel to the Vibrato, or a physical knob on the MIDI controller to control any of the other macro knobs.

Ch	CC	Control	Min	Max
1	16	Reverb	0.189	1.00
1	18	FXB	0.079	1.00
1	19	Delay	0.173	1.00
1	71	Morph	0.00	1.00
1	74	Color	0.00	1.00
1	76	Time	0.00	1.00
1	77	Motion	0.00	1.00

### 3.4.2.1. Assigning and Unassigning Controls

Click the **Learn** button in the MIDI tab to put Augmented STRINGS into Learn mode. Controls available for assignment are 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. 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 \[p.18\]](#) described below.

This is an incredibly powerful feature as any function from the Advanced Panel can be assigned MIDI control. Just follow the same procedure as above or simply right click 'Add control' at the bottom of the MIDI tab to reveal the list of assignable controls.

### 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 Augmented STRINGS 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. Values are expressed as decimal fractions from zero to 1. It is possible to 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.

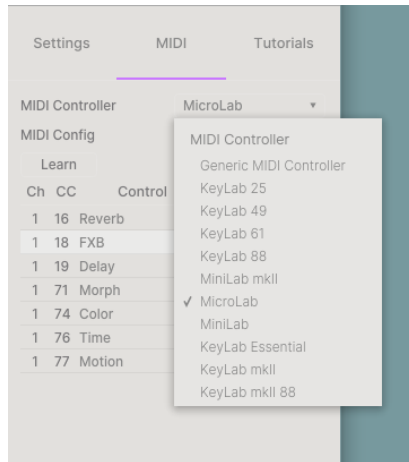
### 3.4.2.3. MIDI Parameter Menu

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.

Settings		MIDI	Tutorials	
MIDI Controller		MicroLab	▼	
MIDI Config		User1*	▼	
Learn				
Ch	CC	Control	Min	Max
1	16	Reverb	0.190	1.00
1	18	FXB	0.080	1.00
1	19	Delay	▼ Absolute	
1	71	Morph	Relative	
1	74	Color	Delete	
1	76	Time	Change Parameter	
1	77	Motion	0.00	1.00
1	85	MasterVolume	-70.0dB	12.0dB
1	93	FXA	0.00	1.00

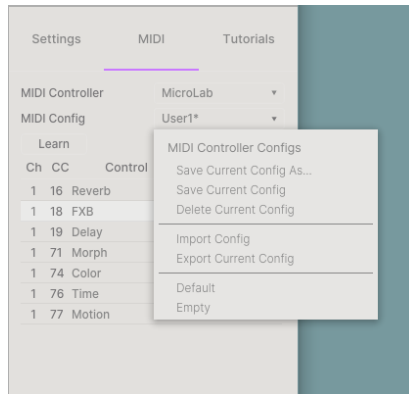
- **Absolute:** The assigned parameter in Augmented STRINGS tracks the literal value your physical controller is sending out.
- **Relative:** The assigned parameter in Augmented STRINGS will go up or down from its current value in response to physical controller movements. This is often useful when using endless 360-degree encoders that don't have physical motion limits.
- **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 Augmented STRINGS. 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 wanted” parameters in Augmented STRINGS for a plug-and-play experience. 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 Augmented STRINGS 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 Augmented STRINGS 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 one time 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 predetermined controller assignments.
- **Empty:** Removes the assignments of all controls.

### 3.4.3. Tutorials Tab

In this tab, which can also be opened by selecting Tutorials from the [Main Menu \[p.9\]](#), you can click on titles for the individual chapters, which in turn will take you through different areas of Augmented STRINGS in steps. The parts of the panel to focus on are highlighted as you go.

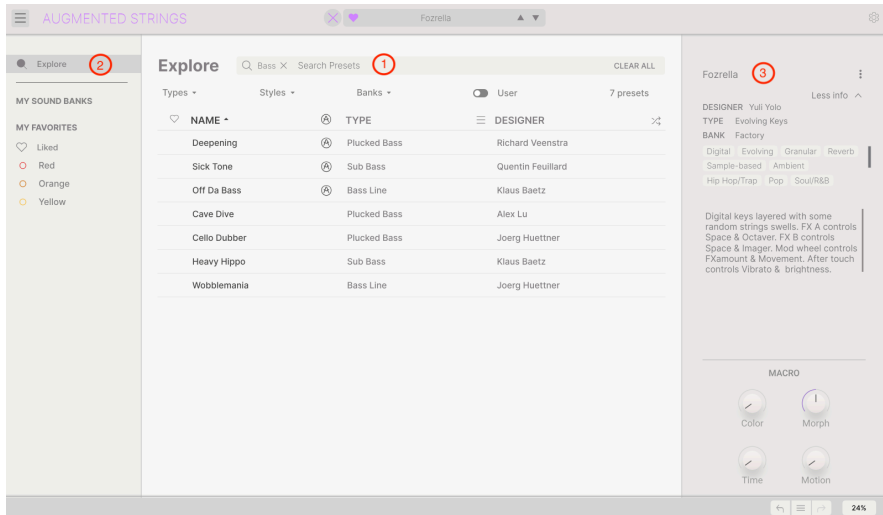


! If you're editing a Preset, make sure to save it before opening the Tutorials because doing so will load a new Preset and overwrite your changes. The Tutorials also take over the Side Panel space when in use.

## 4. THE PRESET BROWSER

The preset browser is how you search, load and manage sounds in Augmented STRINGS. It has a couple of different views but they all access the same banks of presets.

To access the search view, click on the browser button (the icon looks a bit like books on a library shelf).



*The Preset Browser button*

Number	Area	Description
1.	<a href="#">Search and Results [p.22]</a>	Search presets with text strings, and by tags for Type and Style.
2.	<a href="#">Sidebar [p.27]</a>	Manage banks and Playlists.
3.	<a href="#">Preset Info [p.28]</a>	Summary of Bank and Tags, Designer name, and description info for current Preset.

## 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 \[p.23\]](#) 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.

NAME	TYPE	DESIGNER
Ensemble Sustain Tremolo	String Ensemble	Joerg Huettner
Hesitate Ensemble	String Ensemble	Quentin Feuillard
Crispy Ensemble	String Ensemble	Lily Jordy
Dynamic Ensemble	Bowed Strings	Yuli Yolo
Glide Ensemble	Bowed Strings	Victor Morello
Arrival	String Ensemble	Gustavo Bravetti
Coerilla	Bowed Strings	Yuli Yolo
Serenade	String Ensemble	Gustavo Bravetti
Autumn	Arpeggio	Gustavo Bravetti
A Sheer Duck	Arpeggio	Richard Veenstra
Airy Strings	String Ensemble	Ed Ten Eyck

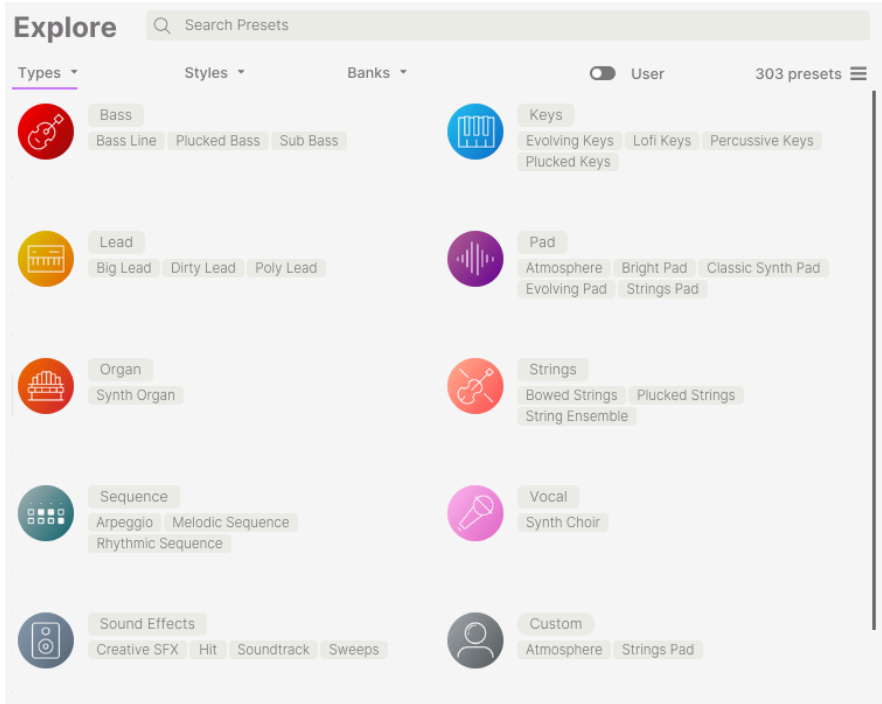
*Filter by typing text in the Search field*

## 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.

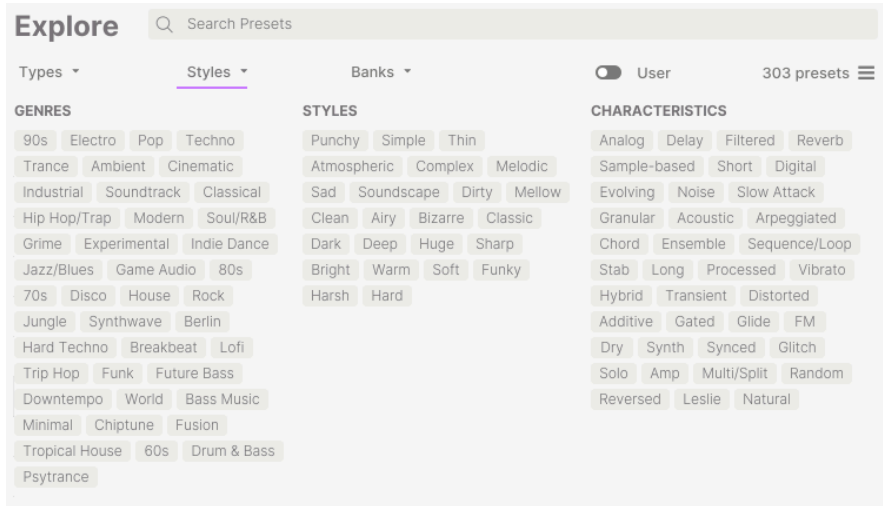
Results columns can be inverted by clicking the arrow buttons to the right of their titles (Name, Type, Designer).



## 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.

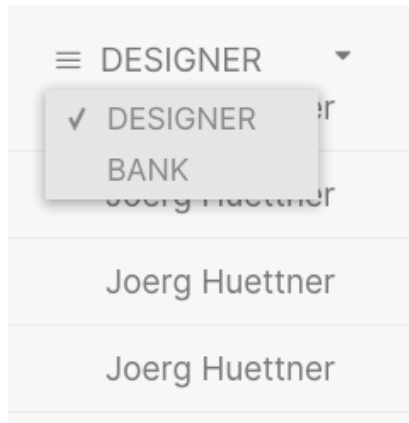
#### 4.3.1. Sorting the Preset Order

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.

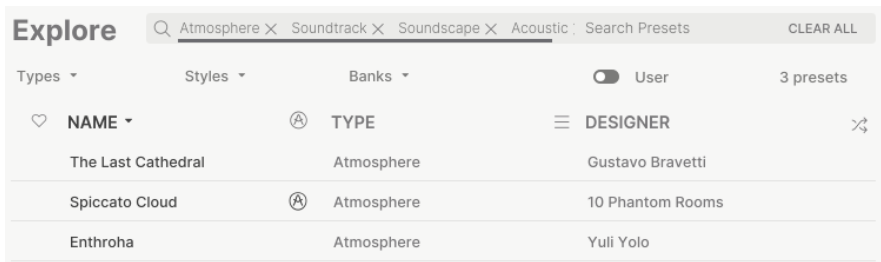
Click the **Arturia logo** to the left of **TYPE** to bring factory-featured Presets to the top of the list. These will appear just under any Presets you have [liked](#) [p.26].

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.



#### 4.3.2. Clearing Tags

Just below the Types, Styles, and Banks buttons, you will see labels for all the active tags in a search. Click the X next to anyone 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.

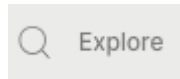
♥	NAME
♥	Fozrella
♥	Sparkplug
♥	The Fog Realm
♥	Wobblemania
♥	Broken Gramophone
♥	By the Sea
♥	Sweet Velvet
♥	Trippy Twista

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 \[p.22\]](#) section.

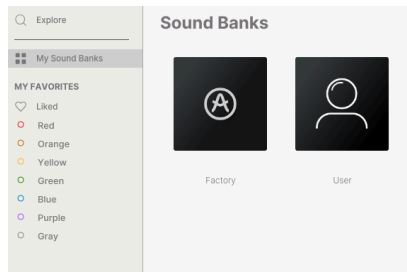
The topmost option is:



The **Explore** section is the default, letting you search the current bank of Presets loaded into Augmented STRINGS as we did in the previous section.

### 4.4.1. My Sound Banks

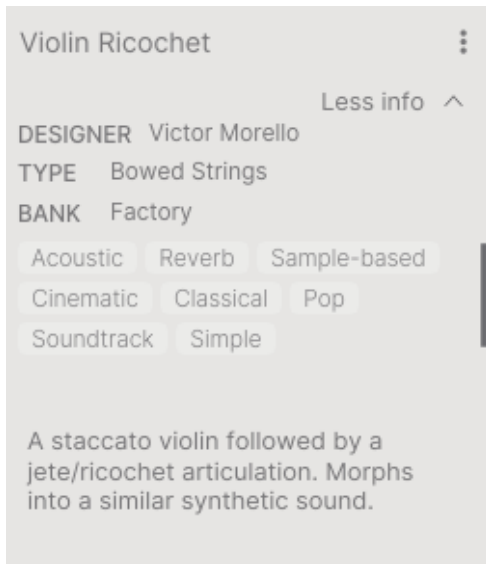
This enables you to choose from the Factory and User banks currently available in Augmented STRINGS. Any Future Banks you acquire will appear here.



- **Liked:** Presets you have liked using the heart icon. This appears at left when you mouse over any item in a results list.
- **Colour codes:** Select from up to 7 colours to assign to any preset, favourite or otherwise. This then allows for quick filtering of your presets.

## 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.

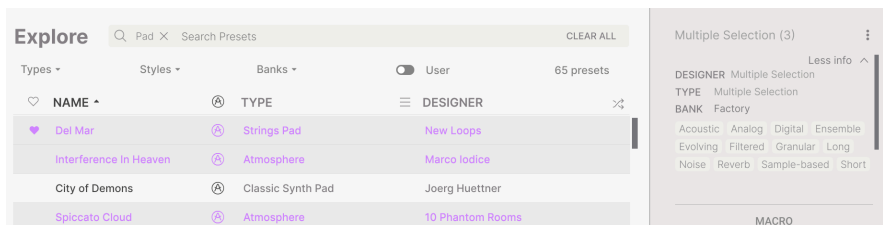


To make the desired changes, you can type in the text fields, use one of the pull-down menus to change the Bank or Type, and click the + sign to add or delete Styles.

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.

### 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. By using the the 3 vertical dots on the top right hand, you can also assign these one of the color codes or create/add to a playlist.

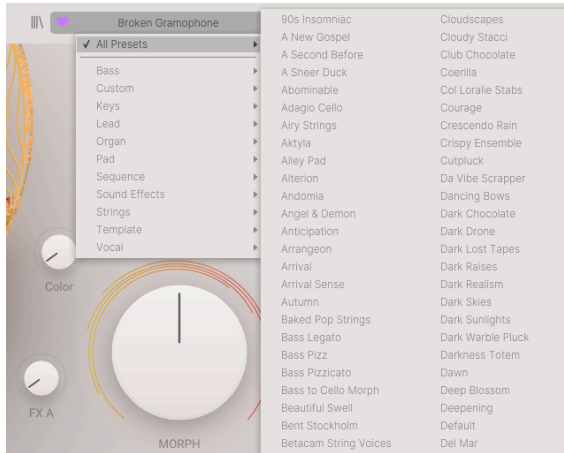




♪ If you want to alter the information for a Factory Preset you must first use the **Save As** command to re-save it as a User Preset. After this the Info section will gain Edit and Delete buttons at the bottom of the window.

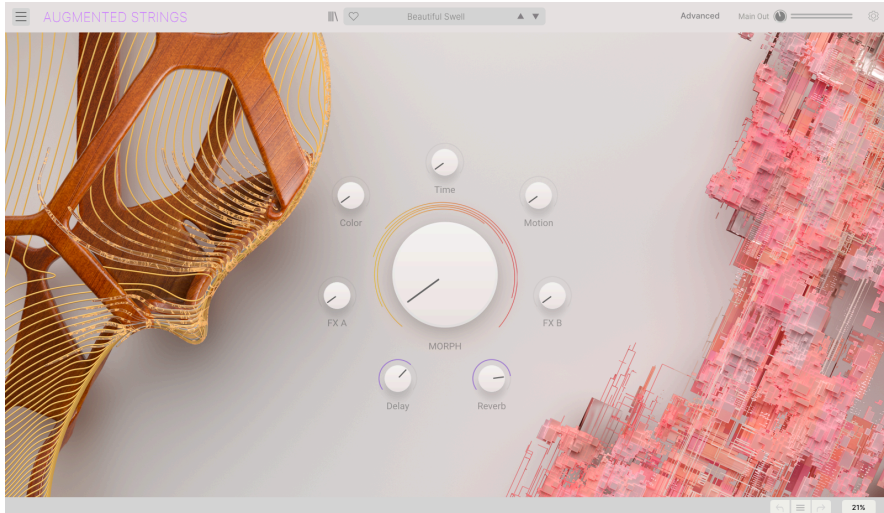
## 4.6. Preset Selection: Other Methods

Click on the Preset name in the center of the upper tool bar 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.



"All Types" in the drop-down menu, ignores any and all search criteria. And for the Type choices below the line, they always include all Presets for that Type.

## 5. MAIN PANEL AND FEATURES



*The Main Page*

On the Main Panel, Augmented STRINGS has a very simple layout with eight macro knobs. Seven knobs surround an eighth, oversized Morph control. These allow you to make changes to the sound very simply. You can also access the deeper programming functions of Augmented STRINGS by clicking Advanced in the upper Toolbar. This is covered in detail in the next chapter [Advanced Panel \[p.32\]](#)

Of the 8 controls, half of the macros directly pertain to effects, whilst the remaining are designed to adjust various aspects of the sound. All macros have the capacity to adjust several parameters at once.

### 5.1. Macro controls

#### 5.1.1. Sound based controls

- **Morph** This oversized control allows you to morph between Layer A and Layer B. Select up to 8 parameters freely assignable between both layers, to transform your sound.
- **Color** This macro affects the color and harmonic content of the sound. This means the sound engine and filter parameters, of each layer. Select up to 6 destinations to change the texture of your sound.
- **Time** Changes the timing of the preset. Select up to 6 destinations to change the envelope parameters of each layer.
- **Motion** This macro allows you to add movement to your sound. Assign up to 6 parameters from the Modulation and Arpeggiator Tabs.

### 5.1.2. Effects

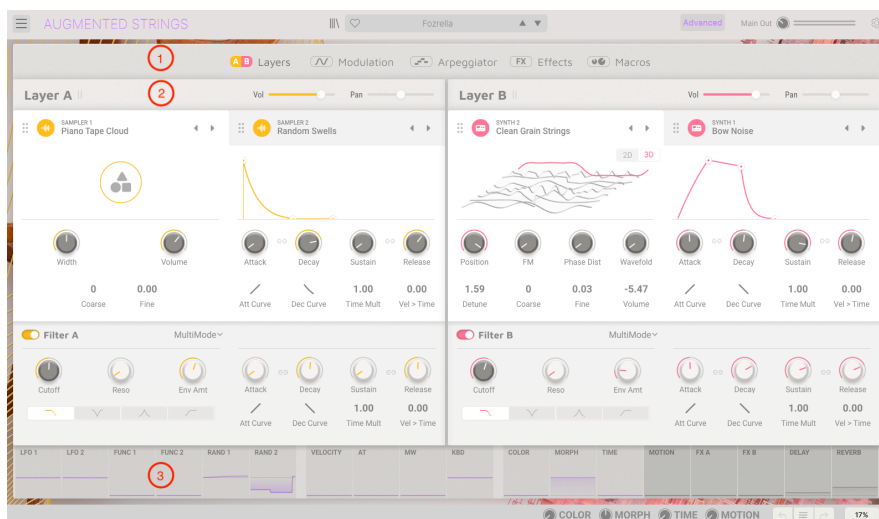
With these Macro controls you can adjust the amount of effect added to your sound. Choose up to 4 parameters for each effect macro.

- **FXA** This adjusts various parameters linked to the insert effect, directly effecting Layer A.
- **FXB** This adjusts various parameters of the insert effect, directly effecting Layer B.
- **Delay** Add movement to your sound with delay. This macro can control any effect parameter including the amount of wet/dry mix. Delay is an insert effect on the Master bus and the first FX in the chain.
- **Reverb** Add space to your sound with reverb. This macro can control any effect parameter including the amount of wet/dry mix. Reverb is an insert effect on the Master bus. Reverb follows Delay in the FX chain.



## 6. ADVANCED PANEL

Clicking "Advanced" lifts the hood of Augmented STRINGS and allows us to delve deeper into the sound and design of our patches.



*The Advanced Page*

This panel can be divided into 3 parts:

- **1:** The navigation menu lets you navigate through the individual Advanced pages, titled Layers, Modulation, Arpeggiator, Effects, and Macros.
- **2:** Displayed here is each page as selected from the navigation section.
- **3:** Permanent visual display of Modulation, MPE and Macro settings. You can also use this to assign destinations to modulators and modify the amount sent to them.

Also note, that whilst in Advanced mode, controls for the sound macros appear in the lower toolbar.

At the top you can access 5 separate sections by clicking on the text.

- **Layers [p.33]** deals with the layer content, including engine selection and all associated parameters. Here you will find your VCA, Filter and envelope for each Layer.
- **Modulation [p.44]:** access all the modulation options available
- **Arpeggiator [p.53]:** modify your arpeggio sequence of up to 16 notes
- **Effects [p.55]:** access FX A and FX B, select up to 2 effects per slot plus parameters for the master effect, Delay & Reverb.
- **Macros [p.71]:** The 4 macro controls of Colour, Time, Movement & Morph, plus the Effects Macro : FX A, FX B, Delay, Reverb.

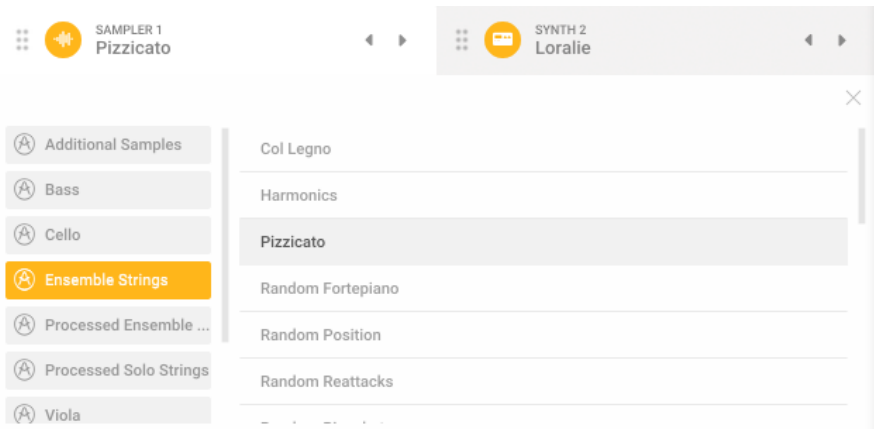
As you can see the instrument is split down the middle, with each Layer being freely assignable to either Engine. There are 2 engines to choose from: multisample or synth; select from Virtual Analogue, Wavetable, Granular & Harmonic methods of synthesis. Further to this you can add a second engine per Layer, also assignable from multisample or synth. This makes Augmented STRINGS a truly flexible and powerful instrument.

## 6.1. Layers

Here lies the beating heart of Augmented STRINGS. Both Layers have 2 slots which allow you to add any combination of the two sound engines. Each Layer also has global volume and pan controls at the top, plus multiple filter types, below.

### 6.1.1. Sampler

This Engine is dedicated to sampled sound and contains beautifully multisampled sounds.



*Select your Sample*

You can choose from all of the standard classical solo stringed instruments from Bass, through Cello and onto Viola and Violin. Each instrument has a good variety of samples to choose from, including processed sounds.

#### 6.1.1.1. Common Controls

These controls are available for every sound.

- **Volume:** Controls the overall level of the samples
- **Coarse:** Sets the Part's pitch in semitones
- **Fine:** Adjusts the Part's pitch in cents.

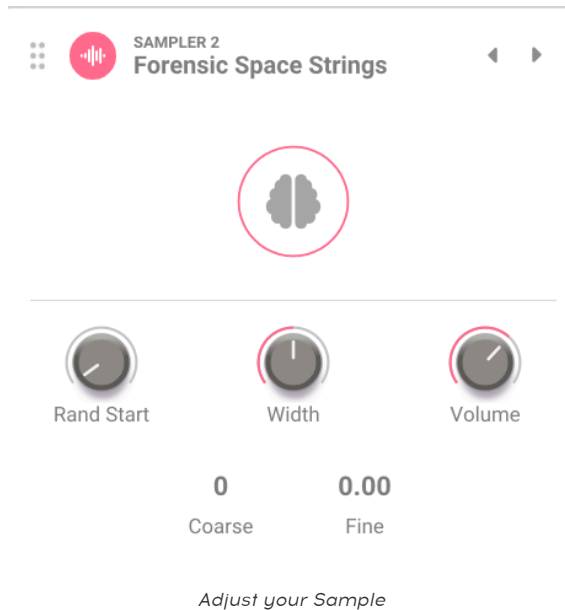
### 6.1.1.2. Multisample Controls for Real Strings

Our stringed instruments were painstakingly multi-sampled with close and far mics. These have a specific set of controls, you can access these samples and blend between them with the controls below.

- **Width Close:** Sets the stereo spread of the close mics
- **Mix:** Adjusts the mix between room and close miked samples.
- **Width Far:** Sets the stereo spread of the room mics

### 6.1.1.3. Multisample Controls for Creative Strings and Extras

When using the extras and creative samples, different controls become available.

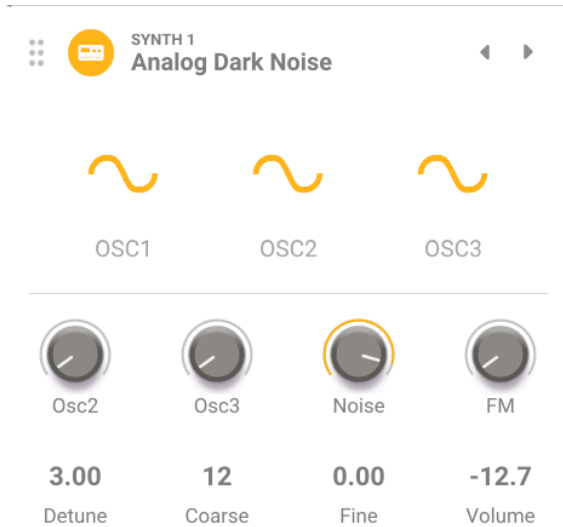


- **Random Start:** Adds randomness to when the sample playback begins
- **Width:** Sets the stereo width of the sound.

## 6.1.2. Synth

This Engine is dedicated to synthesized sound and offers 4 separate engines to help augment your wonderful multisampled string sounds. You have the option of Virtual Analogue, Granular, Harmonic & Wavetable methods of synthesis.

### 6.1.2.1. Analogue Synthesizer



#### *Analogue Synthesizer*

If there's anything Arturia knows how to do well, it is to emulate the characteristics and behavior of the most beloved analog synthesizers of all time. The analogue engine in Augmented strings gives you all of the flavour and none of the fuss.

- **OSC 1, 2 & 3:** Oscillator Waveform, switchable between sine, triangle, saw, inverse saw and square.
- **OSC 2 & 3 Level:** Controls the individual levels of the oscillators.
- **Noise:** Adjusts the amount of the noise generator.
- **FM:** Set the amount of modulation coming from a source oscillator, affecting the frequency of VCO1 and/ or VCO2.
- **Detune:** Sets the amount of detune between unison voices.

- **Coarse:** Adjusts the tuning of the oscillators in semitones, 2 octaves up or down
- **Fine:** Allows fine-tuning of the oscillators in cents.
- **Volume:** Adjusts the output Volume of the overall sound

### 6.1.2.2. Granular Synthesizer



*Granular Synthesizer*

Granular synthesis works by taking a small piece of a sample, called a grain, and manipulates it to create complex textures. The viewer window displays 6 sample slots as the basis for your sound.

- **Start:** Determines the point at which the grain begins playback when triggered.
- **Density:** Sets how often grains are generated. Use the drop-down menu to specify whether the grain generation rate is tied to cycles per second (Hertz) or tempo-synced values (binary, dotted or triplets).
- **Size:** Determines the size of each grain. The drop-down menu lets you select between Time (1ms to one second), tempo synchronized time (binary, triplet or dotted) or by ratio (a division of the current Density value that was calculated for the grain).
- **Env Shape:** Sets a window that alters the attack and release characteristics of the grains, which can produce results from “smooth” to “clicky.”
- **Coarse:** Adjusts the tuning of the sample in semitones, 2 octaves up or down
- **Fine:** Allows fine-tuning of the oscillators in cents.
- **Volume:** Adjusts the output Volume of the overall sound

### 6.1.2.3. Harmonic Synthesizer



#### *Harmonic Synthesizer*

Much of traditional synthesis is subtractive. That is, you start with a complex waveform full of harmonics and then filter out what you don't want. Additive synthesis is the opposite: You add up individual sine waves (a pure sine wave has no harmonics) until you have a precise harmonic profile. The resulting spectrum is displayed in the viewer at the top center of the engine, with controls below it. Augmented STRINGS lets you control a series of harmonics via just a handful of settings.

- **FM:** Set the amount of modulation coming from a source oscillator to the fundamental frequency of the harmonic oscillator leading to modulate all the harmonic series.
- **Section:** Sets a "window" in the harmonic series, which those spectral filters affect.
- **Morph:** Not to be confused with the main Morph knob, this crossfades between 2 factory-programmed spectral filters that boost and cut parts of the harmonic series.
- **Parity:** This changes the proportion of odd-numbered and even-numbered multiples in the partial series. You can have all odds, all evens, or any mix in between.
- **Partials:** This control sets the number of partials in the harmonic series.
- **Coarse:** Adjusts the tuning of the sound in semitones, 2 octaves up or down
- **Fine:** Allows fine-tuning of the sound in cents.
- **Volume:** Adjusts the output Volume of the overall sound

#### 6.1.2.4. Wavetable Synthesizer



##### *Wavetable Synthesizer*

Wavetable synthesis offers a lot of interesting options which an ordinary oscillator cannot provide. Each wave table is made up of individual waves chained together. Through real-time knob movements, macros or modulation, it can shift it's wave shapes and thus harmonic content to great effect.

The Wavetable engine type contains a window that shows the wavetables in two or three dimensions. A small button in the upper right corner toggles the view.

- **Position:** Scan through the different waves included in the currently selected wavetable. This can also be selected by dragging the wavetable in the viewer window. It may be helpful to switch between the 2D and 3D renderings of the waveforms to gain an overview of the options.
- **FM:** Adds Frequency Modulation to the wavetable.
- **Phase Distortion:** Phase distortion is a method of warping a source waveform by a modulator wave. As the Amount is increased the amplitude positions within the source wave are shifted in time, creating a warping of the sound.
- **Wavefolding:** This “folds” over the “peaks and valleys” of both the positive and negative phase of the wave. This adds additional harmonics, use this to create increasingly complex, unique waveforms.
- **Detune:** Sets the amount of detune between unison voices.
- **Coarse:** Adjusts the tuning of the wavetable in semitones, 2 octaves up or down
- **Fine:** Allows fine-tuning of the wavetable in cents.
- **Volume:** Adjusts the output Volume of the overall sound

### 6.1.3. Amplitude Envelope



*Adjust your envelope*

Each of the 4 parts in Augmented STRINGS have an envelope to control the amplitude of each of the sounds. This envelope will help you sculpt the 'shape' of the sound affecting the volume from the moment you hit a key. This envelope can be adjusted by either using the labelled controls or by grabbing a point on the graph with your mouse.

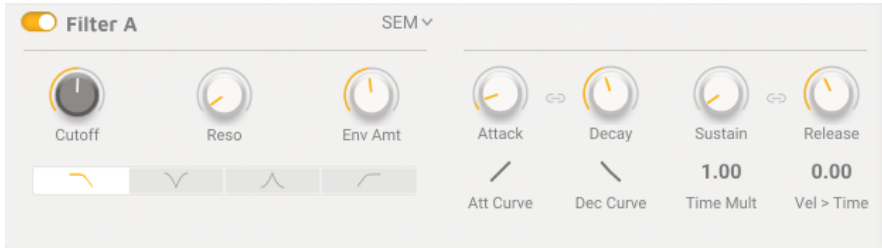
The Envelope controls are as follows:

- **Attack:** Sets the duration of the Attack stage of the Envelope.
- **Decay:** Adjusts the time of the Decay stage of the Envelope.
- **Sustain:** Controls the amplitude of the Sustain stage of the Envelope. When holding a note, the envelope will settle into this stage for as long as the note is held, after the initial Attack and Decay stages complete.
- **Release:** Sets the duration of the Release stage of the Envelope, which describes how long it will take for volume to decrease to silence once a key has been released.
- **Att Curve:** Adjust the slope curve of the Attack from linear to exponential or logarithmic.
- **Dec Curve:** Adjust the slope curve of the Decay from linear to exponential or logarithmic.
- **Time Mult:** Multiplies or reduces the overall run time of the envelope.
- **Vel>Time:** Adjusts the sensitivity of the attack stage based on playing velocity – when this is turned up harder velocity results in a shorter attack and softer velocity results in a longer attack.

The **Link** icon within the ADSR controls, links the Decay-Release function of the envelope.



## 6.1.4. The Filter



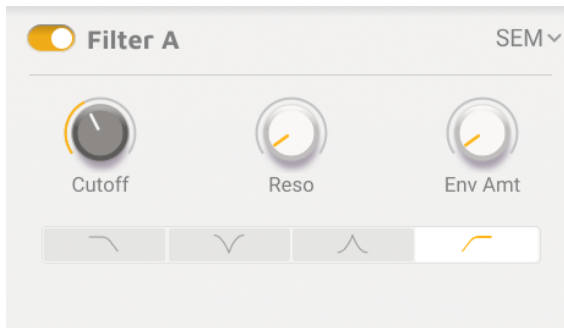
*The Filter Settings*

This section contains the filter controls, which are responsible for sculpting the frequency spectrum and timbre of the sound. Both Layers have their own separate Filter which directly affects each Layers 'stacked' sound.

### 6.1.4.1. The filter types:

Augmented STRINGS is equipped with 6 different filter types. From a classic SEM filter to a multimode, on to Surgeon, Comb, Phaser and Formant. The first 3 models are switchable between low pass, notch, band-pass & high pass. This function can also be turned disabled.

#### SEM

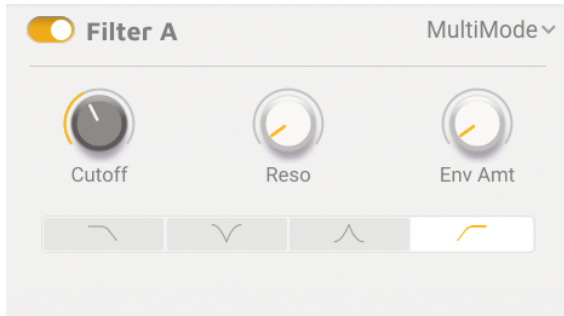


*SEM*

Based on the famous Oberheim SEM Filter. This 12db/oct filter can be used as a low pass, notch, band-pass or high pass type

- **Cutoff:** Sets the filter cut-off frequency, tuned between 20 Hz and 20,000 Hz
- **Resonance:** Sets the filter resonance or emphasis of the filter
- **Env Amt:** Adjusts the response of the filter to its own envelope

## Multimode

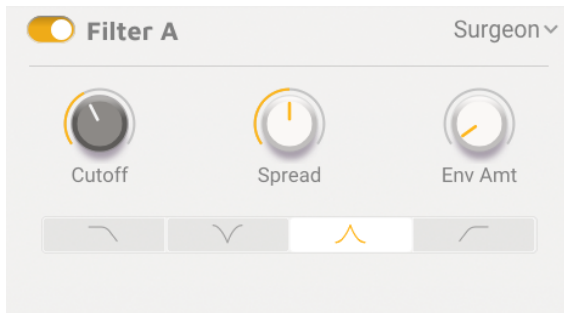


*Multimode*

This 24db/oct analog filter model is unique to Arturia and can be used as a low pass, notch, band-pass or high pass type.

- **Cutoff:** Sets the filter cut-off frequency, tuned between 20 Hz and 20,000 Hz
- **Resonance:** Sets the filter resonance
- **Env Amt:** Adjusts the response of the filter to its own envelope

## Surgeon

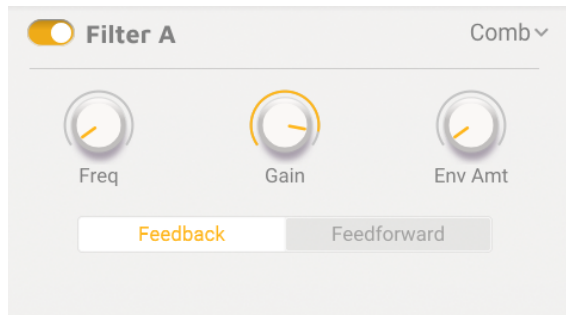


*Surgeon*

This is an extremely steep filter (64 dB/octave) with several Modes available.

- **Cutoff:** Sets the filter cut-off frequency, tuned between 20 Hz and 20,000 Hz
- **Spread:** Controls the width and depth of the affected zone available when in Notch or Bandpass Mode.
- **Env Amt:** Sets the amount of effect the envelope has on the filter

## Comb

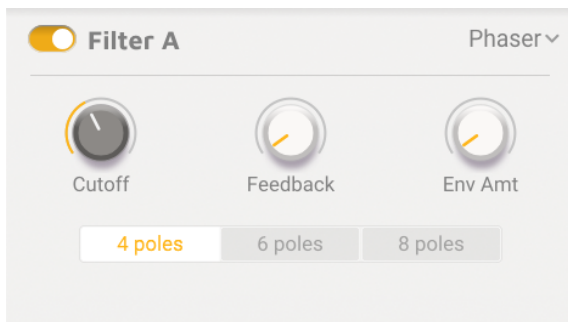


### *Comb*

A comb filter is created by adding a delayed version of the input signal to itself, which results in a series of reinforced and cancelled harmonics. The Comb filter includes a feedback loop that is especially good at producing sustained sounds such as plucked strings.

- **Frequency:** Sets the frequency range of the peaks and notches.
- **Gain:** Emphasizes the strength of the peaks and notches.
- **Env Amt:** Adjusts the response of the filter to its own envelope.
- **Feedback/ Feedforward:** Selects whether the delayed signal is fed back into the comb filter's input or forward into its output.

## Phaser

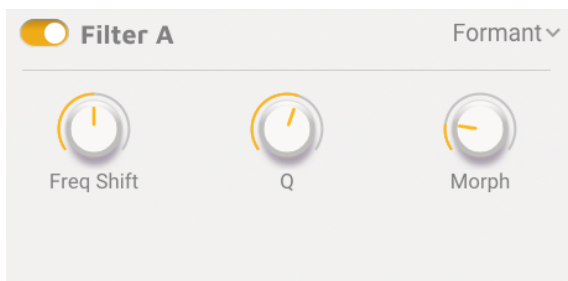


*The filter types*

This filter is based upon an audio effect that has made frequent appearances in popular music since the 1960s. It is similar to a comb filter in that it uses a series of harmonic peaks and notches to process the input signal, with the additional step of putting the peaks-and-notches signal out of phase with the original. The result is a shifting, sweeping, or warbling effect that this Step is designed to bring out.

- **Cutoff:** Sets the frequency range of the peaks and notches
- **Feedback:** Emphasizes the strength of the peaks and notches
- **Env Amt:** Adjusts the response of the filter to its own envelope
- **Poles (Radio buttons):** Select the number of peaks, or poles to be used: 4, 6 or 8

## Formant

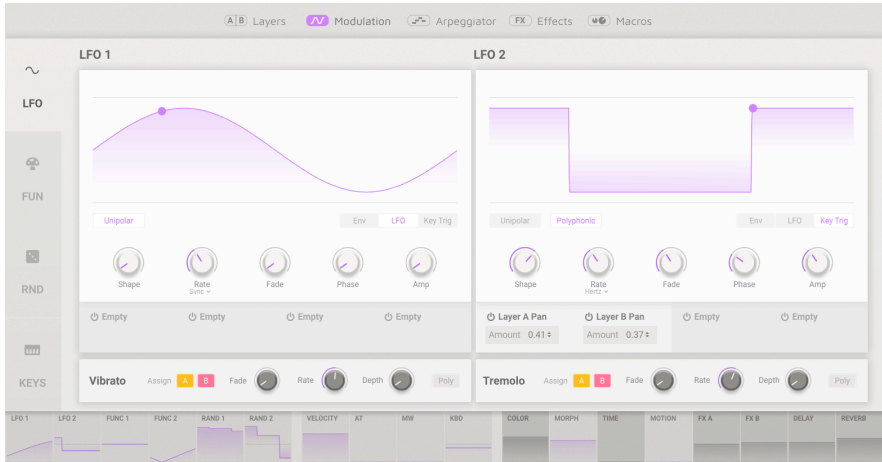


*Formant*

Arguably the most powerful filter in existence is the human speech apparatus. The Formant filter allows you to generate and modify a wide range of "vowel" sounds and then apply them to the input signal.

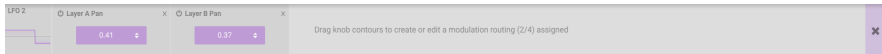
- **Freq Shift:** Sets the frequency range of the formant effect
- **Q:** Emphasizes the strength of the resonant peaks
- **Morph:** Shifts between different vowel sounds.

## 6.2. Modulation



*Modulation page*

Augmented STRINGS offers a huge amount of modulation options. These can be seen in the horizontal strip below every page in the Advanced section of Augmented STRINGS. Not only do they act as a visual display of what each source is doing in real time, but also allow access to the modulation routing.



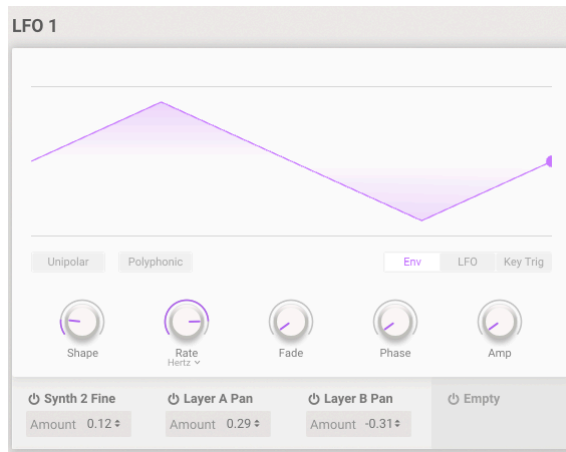
*Modulation Strip*

Clicking on each pane on the Modulation strip opens the associated modulation slots. For example clicking on LFO 1 reveals the four slots available for that LFO, usually found within the Modulation panel.

This works by selecting the Macro or Modulator you wish to use, then drag a relevant knob to assign. You will find text helpful for explaining exactly what you can modulate.

Modulation sources are accessible on the left side of the modulation strip, where you can select between 2 LFOs, 2 Function generators, 2 Random generators and traditional keyboard based modulators. In addition to this you have a separate Vibrato and Tremelo effect which can be freely assigned to Layer A or B.

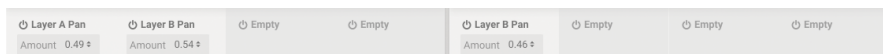
## 6.2.1. LFOs



*Low Frequency Oscillator*

The LFOs or Low Frequency Oscillators in Augmented STRINGS are our standard modulators based around a repeating waveform. They are freely assignable to many destinations and can be clocked to MIDI to enable a perfectly synced performance. Below are the options shared by both LFOs.

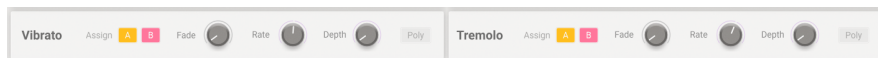
- **Unipolar:** When engaged, LFO sends only positive output values. For example, if we assign LFO in unipolar mode to filter cutoff and set an amount of 50%, you will have an offset of 50% from the original value.
- **Polyphonic:** When active, each voice of polyphony gets its own LFO cycle. This option is not available when LFO is in free running mode.
- **Play Modes:**
  - **Env:** LFO plays through its cycle once when a key is pressed. When legato is enabled the LFO is not retriggered, e.g. when 1 voice is held and another played.
  - **LFO:** LFO plays through constantly, looping to the beginning when it reaches the end.
  - **Key Trig:** LFO plays through constantly but returns to the beginning of its cycle every time a key is pressed.
- **Shape:** Sets the waveform shape of the LFO.
- **Rate:** Sets the LFO speed.
  - **Rate Sync:** Drop-down menu selects whether the Rate is expressed in Hz (free-running) or syncs to tempo with “straight,” dotted, and triplet options for sync type.
- **Fade:** Applies an adjustable fade-in when the LFO retriggers. When in free running mode, the Fade works when the plugin receive a start from transport of the DAW.
- **Phase:** Sets the starting state of the LFO waveform.
- **Amp:** Scales the overall output level of the LFO.



*Modulation destination slots*

Below each of the two LFOs, you'll find four assignable destination slots.

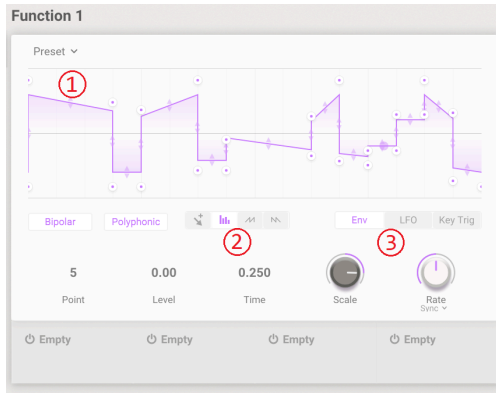
### Vibrato and Tremolo



**Vibrato** and **Tremolo** have very simple controls. Both effects can be assigned to either Layer or none.

- **Fade:** Applies an adjustable fade-in each time a voice is opened.
- **Rate:** Sets the speed of the Vibrato or Tremolo in Hz.
- **Depth:** Sets the amount of the Vibrato or Tremolo.
- **Poly:** When active, the effect is polyphonic. It means that each voice triggers an independent Vibrato or Tremolo.

## 6.2.2. FUN AKA Function



*Function Generator*

This aptly named Tab offers us a multi-segment envelope-meets-LFO Function Generator, with fully adjustable breakpoints. The X-axis of the point represents time while the Y-axis is the modulation amount. You can use Draw Mode to use shapes like Ramp or Sawtooth, or get really creative and draw your own with the graph. You can also save your own presets for easy recall. This function is available in the top left of the Function, on a drop down entitled "Preset".

- **1. The Graphic Display:** This is where you can see the visual representation of your Function. This is fully interactive and can be modified with a mouse. Use the pencil to draw your modulation shape, listed below. Left click to add, right click to remove points and use the double headed arrow between the points to draw a curve, logarithmic or exponential. Use Point, Level and Time to fine tune each of the 22 points.
- **2. Drawing Tools:**
  - **Free:** Adds a single breakpoint; dragging moves it.
  - **Line:** Creates multiple breakpoints with straight lines between them.
  - **Ramp:** Creates multiple breakpoints in a rising saw shape.
  - **Sawtooth:** Creates multiple breakpoints in a falling saw shape.
- **Point:** Use this to select a breakpoint, either drag up or down on the **Point** number or select the point on the graphic display.
- **Level:** Moves the selected breakpoint along the Y-axis.
- **Time:** Moves the selected breakpoint along the X-axis.

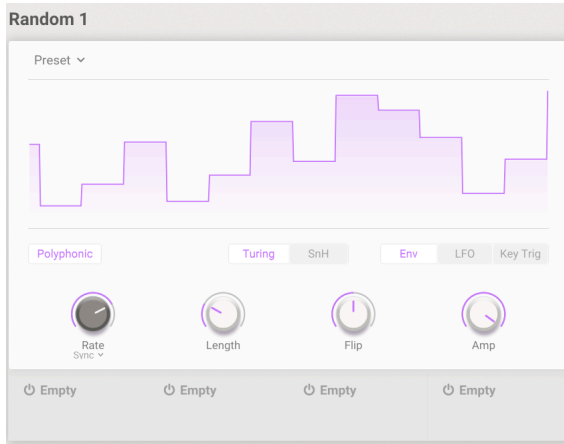


- **3. Play Modes:**

- **Env:** Function plays through its cycle once when a key is pressed. You can add a Sustain Point by double clicking on an existing point. When playing legato, the Function is not retriggered, e.g. when 1 voice is held and another played.
  - **LFO:** Function plays through constantly, looping to the beginning when it reaches the end.
  - **Key Trig:** Function plays through constantly but returns to the beginning of its cycle every time a key is pressed.
- **Scale:** Scales the overall output level of the function across both destinations.
  - **Rate:** Knob sets the Function rate.
    - **Rate Sync:** Set to Hz, the Function free-runs. Set to Binary, Triplets, or Dotted, the rate syncs to master tempo.
  - **Bipolar:** When engaged, the Function sends positive and negative output values.
  - **Polyphonic:** When active, each voice of polyphony gets its own Function cycle. This option is not available in LFO (Free running) mode.

Below each of the two Functions, you'll find four assignable destination slots.

### 6.2.3. RND AKA Random



*Random Generator*

If you thought Functions could get crazy, the two random modulation sources do exactly what the name implies: They create random fluctuations in the modulation output. Each Randomizer works as one of two types: Turing, named for the code-breaking mathematician Alan Turing, this mode creates controlled chaos or the familiar Sample-and-Hold, some controls change based on which option is selected.

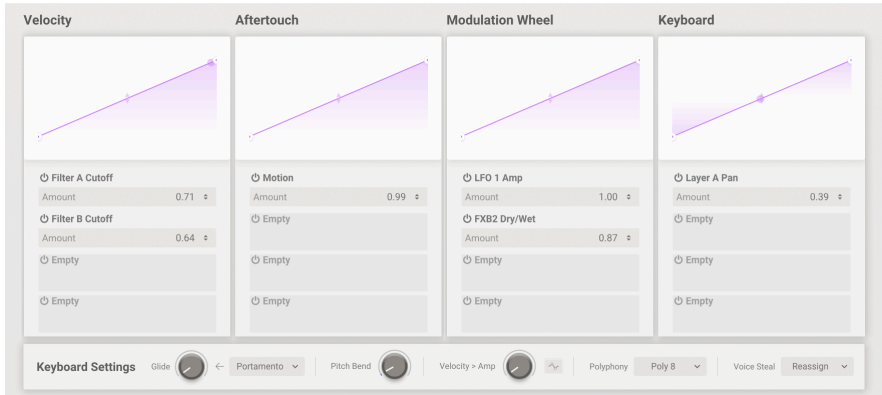
Common to both Turing and Sample and Hold (SnH) are:

- **Polyphonic:** When active, each voice of polyphony gets its own Random cycle. This option is not available in LFO (Free running) mode.
- **Rate:** Sets the speed of the randomizer.
  - **Rate Sync:** Drop-down menu sets whether the randomizer free-runs in Hz or syncs to tempo according to binary, triplet, or dotted values.
- **Amp:** Sets the overall modulation output of the Randomizer.
- **Turing Mode** (radio button):
  - **Length:** Sets the length of the sequence of modulation peaks.
  - **Flip:** Adjusts the probability of modulation peaks being inverted.
- **SnH Mode** (radio button):
  - **Smooth:** Smooths the transitions between the modulation peaks. At zero, you will see a series of uneven square waves.
- **Play Modes** (radio buttons):
  - **Env:** Randomizer plays through its cycle once when a key or another trigger is pressed. Random is not retriggered if played legato even if played polyphonic, only for Turing.
  - **LFO:** Randomizer plays through constantly, looping to the beginning when it reaches the end.
  - **Key Trig:** Randomizer plays through constantly but returns to the begins its cycle every time a key is pressed. In "Turing" Mode, Random is not retriggered if played legato. Even with "Polyphonic" mode selected, if you play legato it will not recreate a new random value for each voice.

For SnH mode each voice opened will retrig a new random value for his own voice

Below each of the two Randomizers, you'll find four assignable destination slots.

## 6.2.4. KEYS



### Keyboard

The final tab in the modulation section puts the modulation back to the player. Along with the Keys, Velocity, aftertouch, the Pitch and Modulation Wheel are all assignable modulation sources within Augmented STRINGS. This page lets you create custom curves for how they respond. You adjust the curves as with Functions, only they're simpler and have a maximum of four breakpoints each. For example you can use velocity to make the sound brighter, aftertouch to add vibrato and Keyboard tracking to Morph the sound between Layers A and B.

- **Velocity:** Shapes output in response to playing velocity.
- **Aftertouch:** Shapes output in response to finger pressure after initial key strike. Note that not all keyboards sense aftertouch.
- **Modulation Wheel:** Shapes output based on wheel position.
- **Keyboard:** Shapes output based on note position (low vs. high) on your keyboard.

Below each of these four keyboard modulators, you'll find four assignable destination slots.

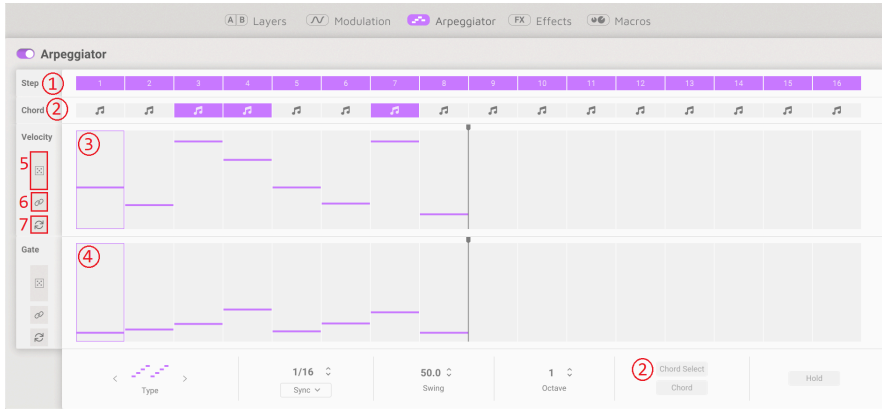


### Keyboard Settings

- **Keyboard Settings** At the bottom of this panel you will find Global Keyboard Settings. These settings control the behavior of the keyboard, polyphony, and other important playing functions such as pitch glide from one note to the next.
- **Glide:** Sets the amount of glide time between notes.
  - **Glide Mode:**
  - **Portamento:** Glide always happens given any Glide knob setting above zero.
  - **Legato:** Glide only happens to notes played without fully releasing the keys.

- **Pitch Bend:** Determines the pitch-bend range in semitones.
- **Velocity > Amp:** This quick routing maps velocity directly to VCA output volume (both Layers).
  - **Curve Switch:** When engaged, the velocity curve described in the previous Step is applied to Velocity > Amp.
- **Polyphony:** Sets a limit on the number of voices Augmented STRINGS uses, from mono to 16. There is also a mono legato option.
- **Voice Steal:** Determines how voices are reallocated if the polyphony ceiling is reached.
  - **Reassign:** The least recently used voice is assigned to the new note only when needed.
  - **Rotate:** Every new note played triggers the next available voice even if the voice limit has not been reached.

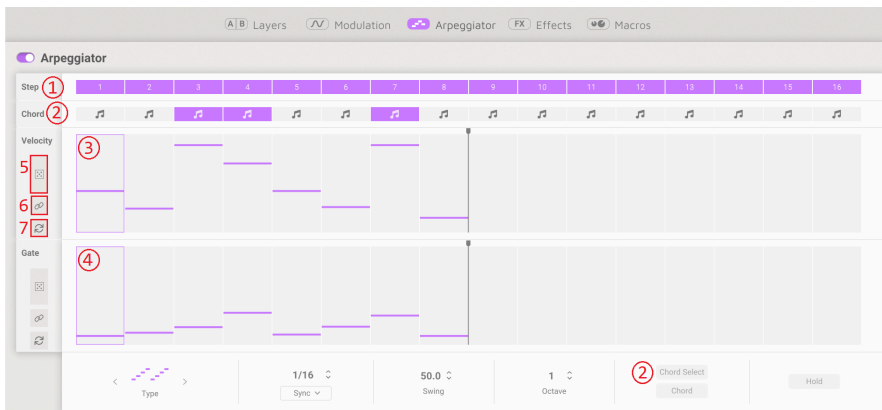
## 6.3. Arpeggiator



*Arpeggiator page*

The Arpeggiator in Augmented STRINGS takes the concept of a traditional arpeggiator, playing back a number of notes held on a keyboard in various modes and expands upon it. There are options here to really take the arpeggiator to the next level. Hold down your notes and select if it sounds as a chord on selected steps or select a completely different chord with the Chord Select option.

### 6.3.1. Step Controls



*Step Controls*

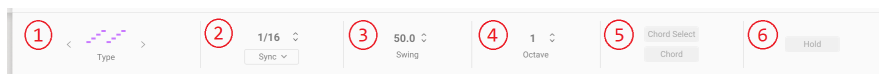
This is where you make all the decisions for how your Arpeggiator will behave. Select up to 16 steps, you can also choose to omit a step to create interesting patterns, without altering the time signature. simply click on the step number. Adjust velocity and gate per step or randomize these functions.

- **1. Step:** Chooses whether the corresponding step is active or silent.
- **2. Chord:** On Selected steps this triggers the chord you are playing or a chord set in Chord Select. This will only play if the velocity step is active or within the range of the sequence.
- **3. Velocity Bars:** Sets the velocity of the note sounded at each step.
- **4. Gate Bars:** Sets the note length or "window" for each Step to occur.

These settings apply to both the Velocity and Gate rows

- **5. Randomize:** Adds random variation to Velocity or Gate.
- **6. Polyrhythm:** When active, Velocity and Gate can have different step lengths. The toggles for Velocity and Gate are linked.
- **7. Reset:** Resets either Velocity or Gate row to its default state.

### 6.3.2. Playback Controls



*Playback Controls*

On the bottom of the Arpeggiator page you can select how the chosen notes and Step settings will play back.

- **1. Mode:** Mode from Up, Down, Up/Down Exc, Up/ Down In, Random or As played.
- **2. Division:** division with rate type, swing and octave amount for your pattern.
  - **Rate Type:** Drop-down menu selects whether the Arpeggiator free-runs in BPM mode or syncs to tempo with Binary, Dotted, or Triplet options. Drag up or down to adjust the Arpeggiator tempo or Sync division.
- **3. Swing:** Delays the second sixteenth-note in every eight-note to create a behind-the-beat feel
- **4. Octave:** Determines the octave range of the arpeggiated notes.
- **5. Chord Select:** Displays pop-up menu where you can choose the chord you want to be played when **Chord** is enabled. This works regardless of the arpeggiator being enabled. Select from 11 preset options or assign your own custom chord.
  - **Chord:** Enable this to use the **Chord select** to be played on the Chord bar in [Step Controls \[p.53\]](#)
- **6. Hold:** As the name suggests, this holds the note or notes played after you release the keys. This works regardless of the arpeggiator being enabled

## 6.4. FX



*Effects page*

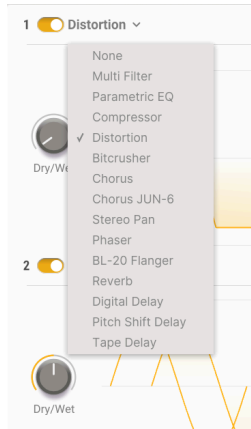
The Effects tab gives access to the controls for both Layer and Main FX. Use the side panel to select between:

- **1:** Layer FX. Choose from up to 14 FX and select up to 2 FX per Layer.
- **2:** Main FX. Select one of 3 different Delay Types and 2 Reverb



### 6.4.1. LAYER FX

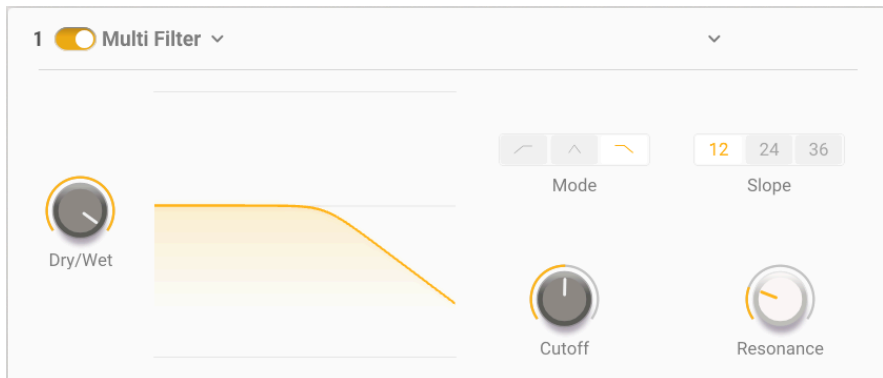
Each Layer has two FX slots allowing you to insert one of 14 Effects in each slot and select up to 2 separate effects per Layer. FX A is linked to Layer A, and FX B is linked to Layer B.



*Effects list*

There are 14 different effects to choose from, taken from Arturia's catalogue of carefully modelled vintage effects. Whatever effect type you choose from the list, you will be able to control the overall volume and enable/disable each FX in the slot. You can also save your settings per FX, using the dropdown preset menu, top right of each Layer pane. Use on other presets you may make.

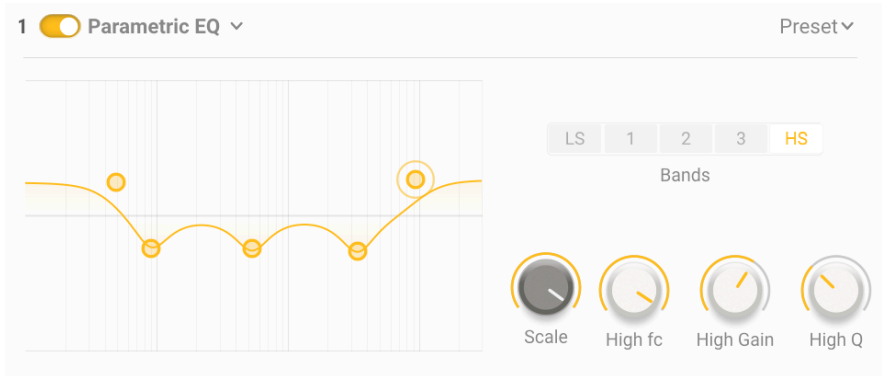
#### 6.4.1.1. Multi Filter



*Multimode Filter*

**Multi Filter:** Switch between 12/24 or 36db/oct resonant Filter Low/ Band/High pass filter.

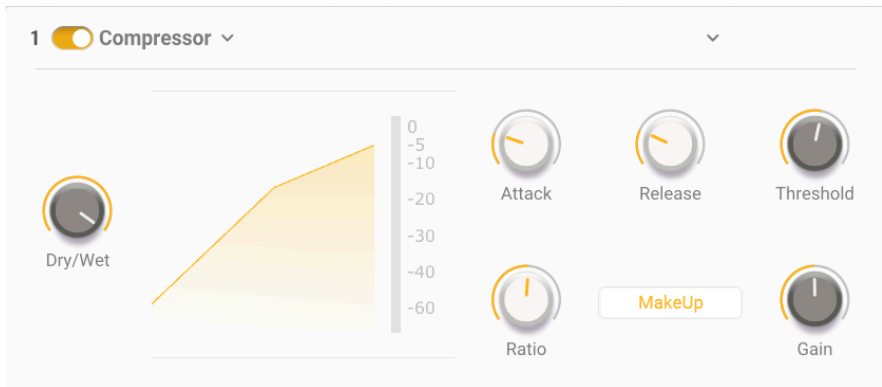
### 6.4.1.2. Parametric EQ



*Parametric EQ*

**Parametric EQ:** features 5 frequency bands, an adjustable Low and High shelf and 3 fully parametric bands with adjustable bandwidth or Q. Use can also use your mouse to select and change settings by using the point in the graph.

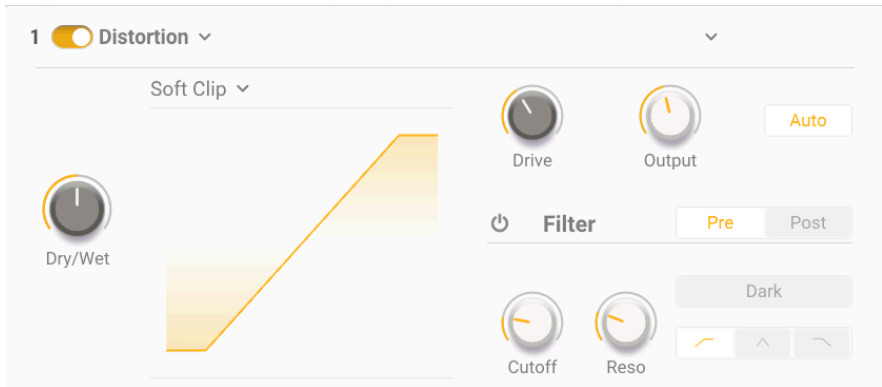
### 6.4.1.3. Compressor



*Compressor*

**Compressor:** Control the dynamics of your sound with this useful tool. Set the threshold for when the processing begins, change the attack and release of the effect and select the amount of compression with a ratio switchable from 1:1 all the way up to 100: 1

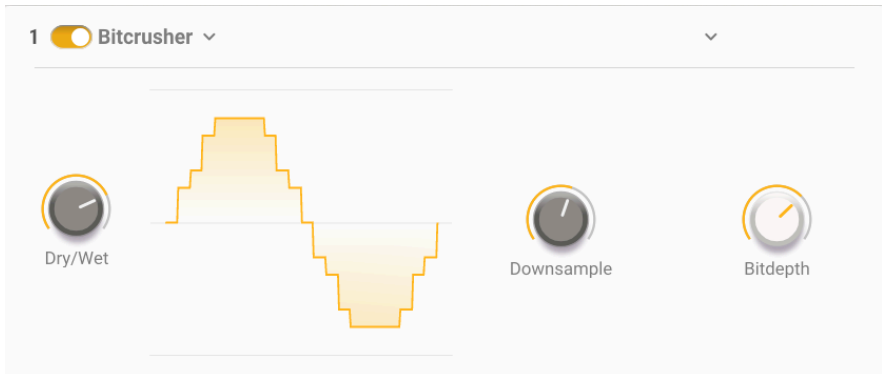
#### 6.4.1.4. Distortion



*Distortion*

**Distortion:** Warm your sound or completely destroy it with a choice of 16 different distortion models. Skulpt the sound further with the optional Low pass, High Pass or Band Pass filter.

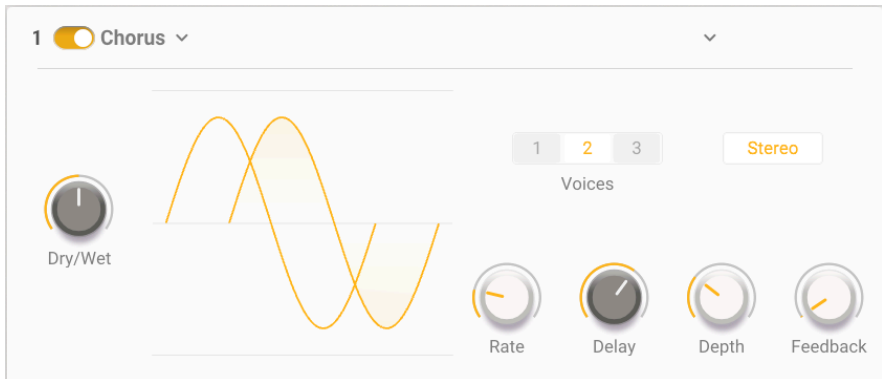
#### 6.4.1.5. Bitcrusher



*Bitcrusher*

**Bitcrusher:** Downgrade the quality of your sound with this simple yet effective Bitcrusher. Downsample up to 80x and change the bitdepth from 16 to 1.5 to get the crunchiest sounds!!

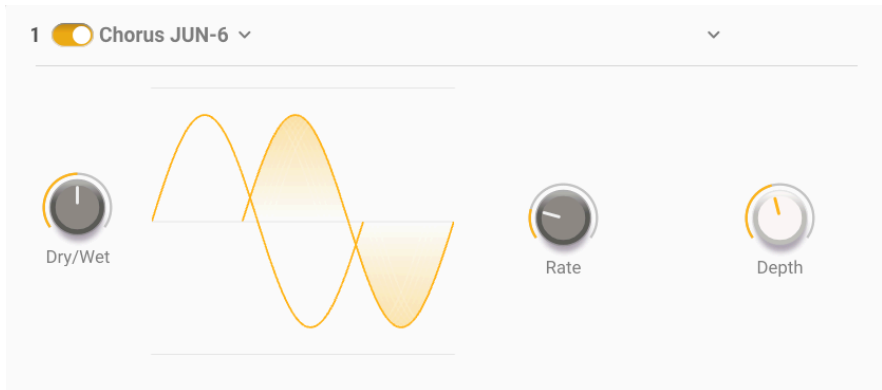
#### 6.4.1.6. Stereo Chorus



*Stereo Chorus*

**Stereo Chorus:** Give your sound more depth with chorus. Add extra richness with up to 3 voices, use rate and depth to take your effect from a gentle swell to something closer to vibrato! Use Delay to increase the size and exaggerate the detune to a sickening swirl and use feedback to cause the sound to flange!

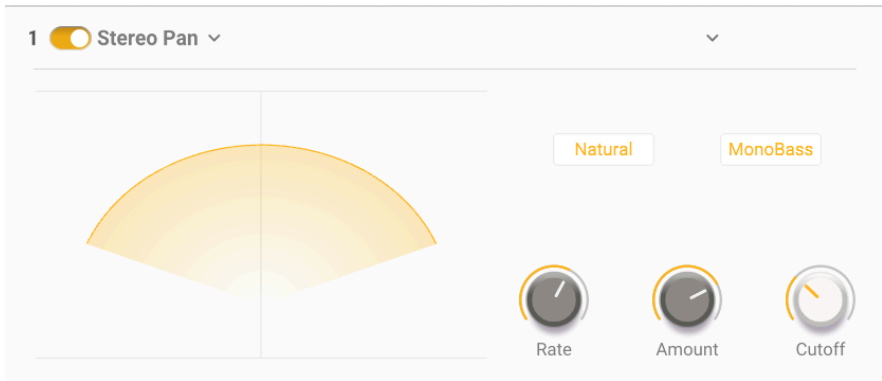
#### 6.4.1.7. Juno 6 Chorus



*Juno 6 Chorus*

**Juno 6 Chorus:** Faithfully modelled on the much coveted chorus module found in the Roland Juno 6 keyboard. Adjust Rate and Depth to add this dreamy effect to your sound.

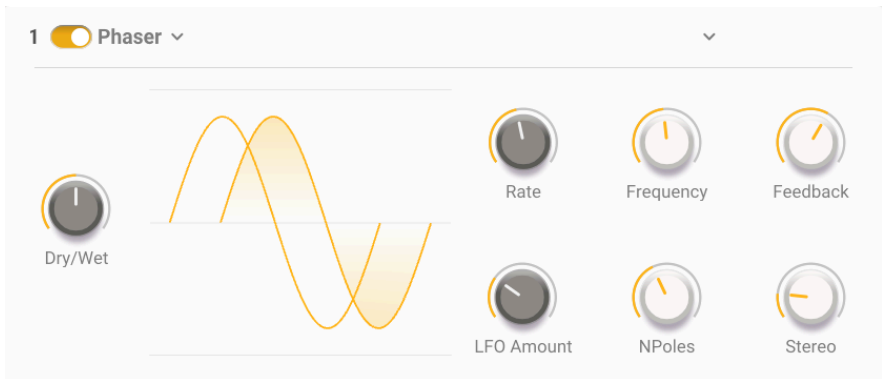
### 6.4.1.8. Stereo Pan



*Stereo Pan*

**Stereo Pan:** Use this effect to effortlessly pan your sound from the left to the right speaker. Select the amount of effect, the rate at which it pans and whether you want a natural or linear sweep. Use the monobass switch to enable a simple low pass cutoff on side channel.

### 6.4.1.9. Phaser



*Phaser*

**Phaser:** This modulation effect takes your sound and splits your signal in two. An all pass filter is added with an assignable number of poles, between 2 and 12. These are then modulated with rate and frequency with feedback to create the signature Phaser sound.

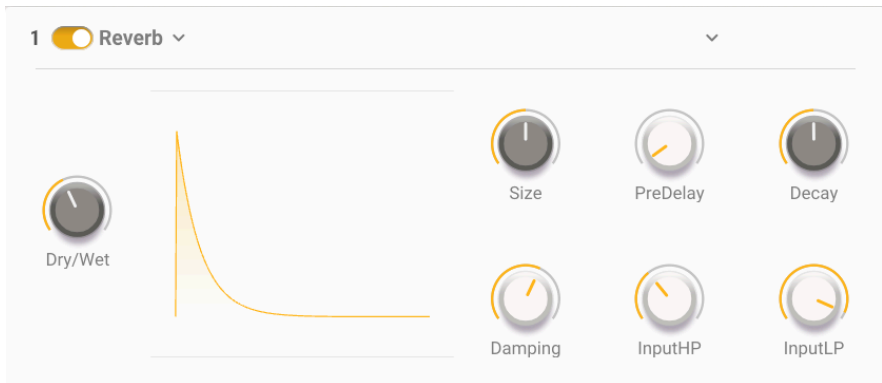
#### 6.4.1.10. BL20 Flanger



*BL-20 Flanger*

- **BL20 Flanger:** Modelled on a rare & unique studio Flanger, the BL20. This effect is achieved by using a delayed version of your sound and then modulating it with an LFO. Add to this feedback and you can go from a faint stereo width effect to out-of-this-world compound modulation in no time at all.

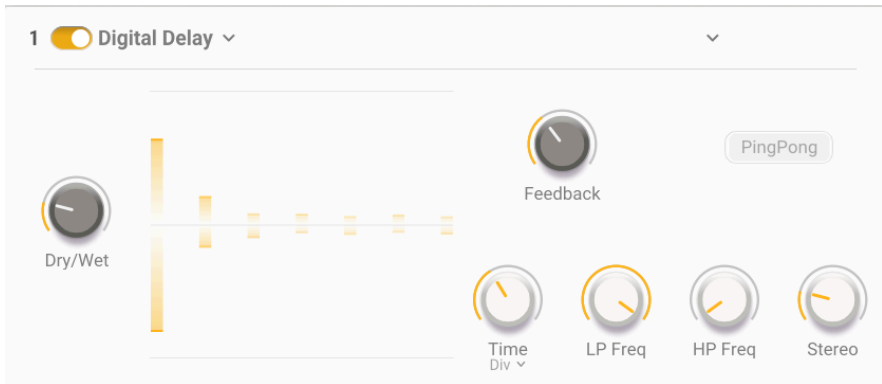
#### 6.4.1.11. Reverb



*Reverb*

**Reverb:** Instantly give your strings that cinematic sound by adding reverb! This simplified, digital reverb allows you to recreate anything from a small ambient space all the way to a canyon!

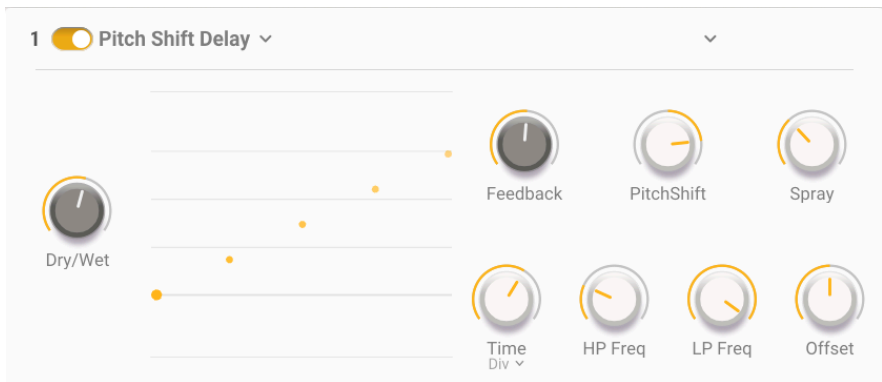
### 6.4.1.12. Digital Delay



*Digital Delay*

**Digital Delay:** This creative digital delay will let you add anything from a subtle slapback echo to a hugely long delay and see the results with the graphic! Includes a low pass and hi pass filter and the option to select ping-pong.

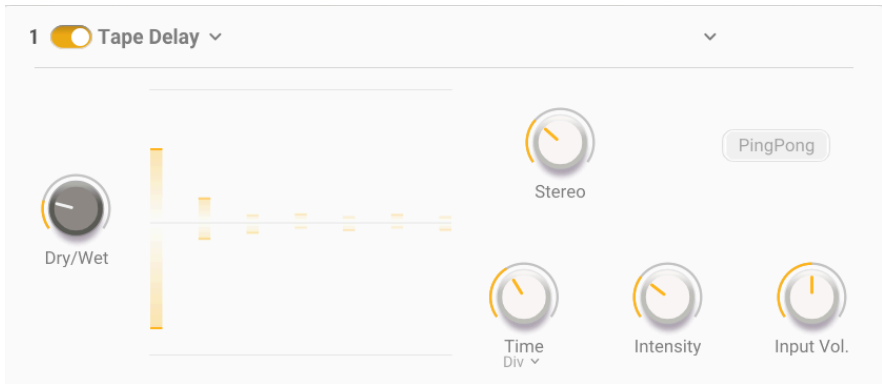
### 6.4.1.13. Pitch Shift Delay



*Pitch Shift Delay*

**Pitch Shift Delay:** Get seriously creative with this much loved vintage effect. Delay and change the pitch of your feedback - use subtly or go wild with this wonderful effect.

#### 6.4.1.14. Tape Delay

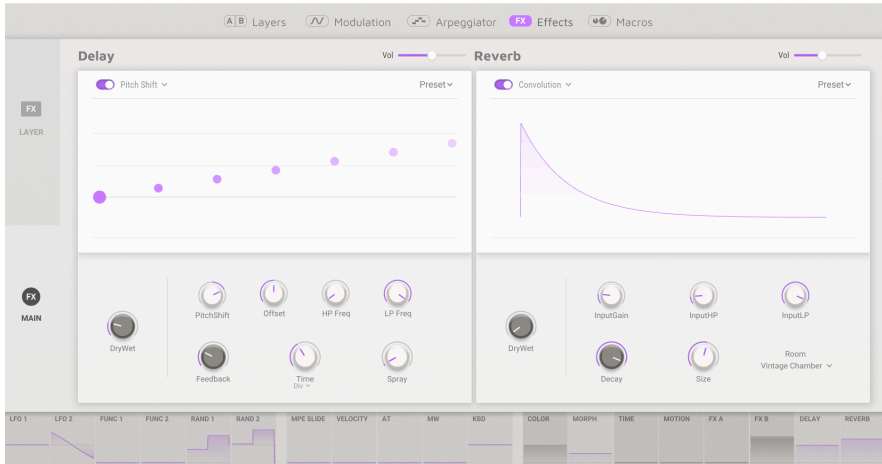


*Tape Delay*

**Tape Delay:** This authentic tape delay emulation pays tribute to the tape based delays that changed the way music sounded forever! Add warmth to your delays and a width of sound not found anywhere else.



## 6.4.2. MAIN FX



*Main FX*

The Main FX is the final connection in the audio chain, prior to output. As they are master effects, they affect both layers, regardless. Here you can select between Digital, Pitch-shift or Tape Delays and Digital or Convolution Reverb. Both effects have a large graphic display where you can affect changes with the click of your mouse!

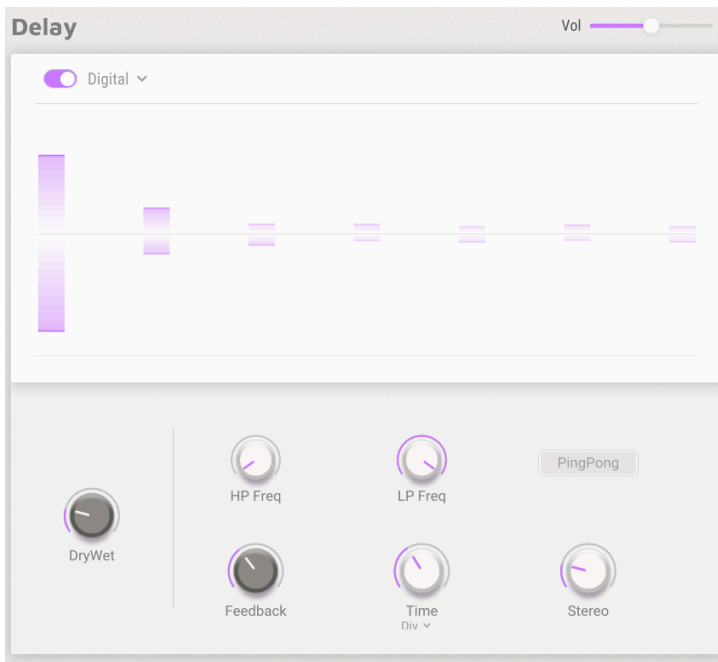
All Main Effects share these controls:

- **Type:** Choose the type of effect.
- **Volume:** Sets the overall output level of the delay.
- **On/Off:** Enable/disable the effect.
- **Dry/Wet Mix:** Set the blend of dry signal with the effect.

### 6.4.2.1. Delay

Select between Digital, Pitch shift or Tape Delay whose full descriptions can be found within layer effects. They share these controls in common:

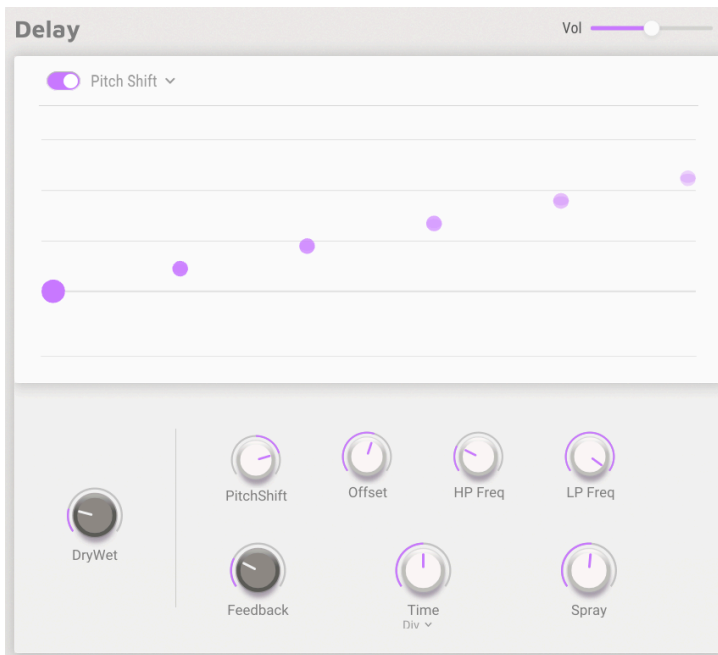
- **Time:** Sets the delay time.
- **Time Sync:** Drop-down menu chooses whether delay free-runs in milliseconds, or syncs to tempo with Binary, Triplet, and Dotted options.



### *Digital Delay*

**Digital Delay:** This creative digital delay will let you add anything from a subtle slapback echo to a hugely long delay.

- **HP Freq:** Highpass filter; cuts low frequencies in the delayed signal only.
- **LP Freq:** Lowpass filter; cuts high frequencies in the delayed signal only.
- **Feedback:** Adjusts the number of repetitions (taps) by feeding the delayed signal back into the effect.
- **Stereo:** Increases stereo width by adding offsets in delay time between channels.
- **PingPong:** When active, pans delayed signal between left and right channels.



### *Pitch Shift Delay*

**Pitch Shift Delay:** Get seriously creative with this much loved vintage effect. Delay and change the pitch of your feedback - use subtly or go wild with this wonderful effect.

- **Pitch-Shift:** Sets the amount of pitch-shifting, upwards or downwards.
- **Offset:** Adds a pitch offset between the left and right channels.
- **HP Freq:** Highpass filter; cuts low frequencies in the delayed signal only.
- **LP Freq:** Lowpass filter; cuts high frequencies in the delayed signal only.
- **Feedback:** Adjusts the number of repetitions.
- **Spray:** Adds randomness to the time spread of the repetitions, in milliseconds.



*Tape Delay*

**Tape Delay:** This authentic tape delay emulation pays tribute to the tape based delays that changed the way music sounded forever! Add warmth to your delays and a width of sound not found anywhere else.

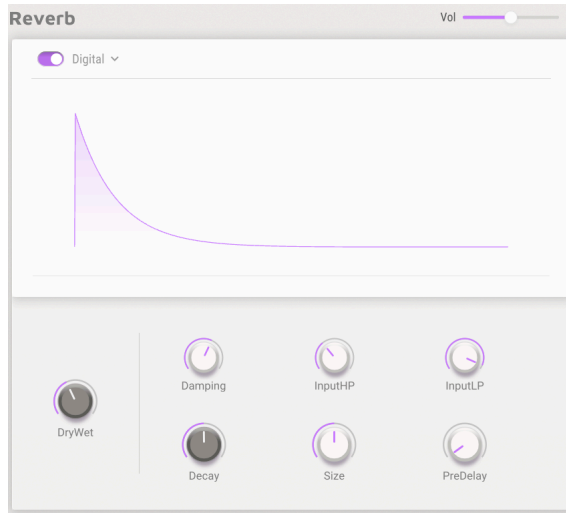
- **Intensity:** Adjusts the feedback and thus the number of repetitions.
- **Input Vol:** Sets the input gain of the Tape Echo.
- **PingPong:** When active, pans delayed signal between left and right channels.
- **Stereo:** Adds stereo width via a small offset in delay times between channels.

### 6.4.2.2. Reverb

Add that special gloss to your sound, with our choice of digital or convolution Reverb. Both seek to place your sound in an acoustic space, each using different methods.

They share these controls in common:-

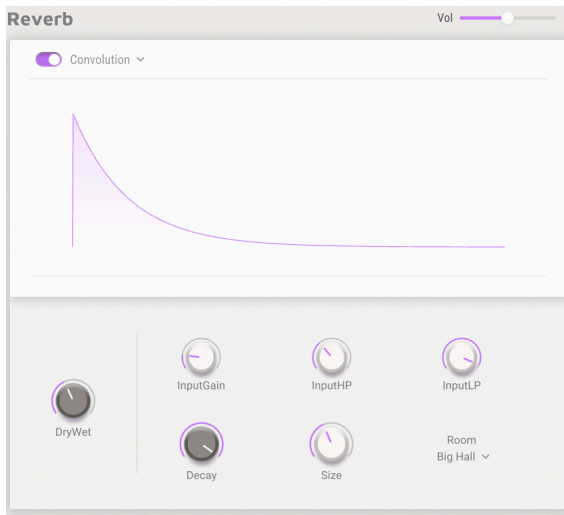
- **Input HP:** Highpass filter; cuts low frequencies in the input signal.
- **Input LP:** Lowpass filter; cuts high frequencies in the input signal.
- **Decay:** Sets the time it takes for the Reverb to die out.
- **Size:** Adjusts the size of the virtual room.



*Digital Reverb*

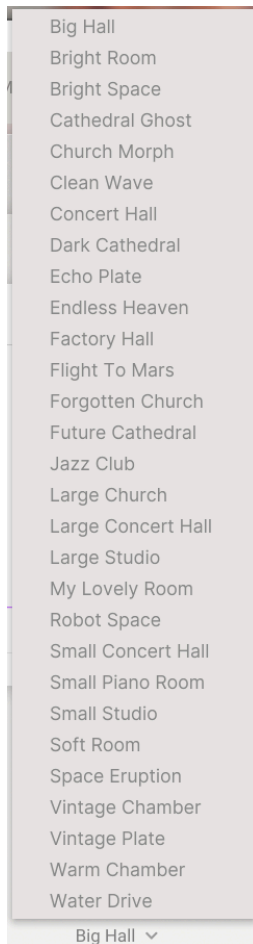
Digital Reverb, in this case Algorithmic, emulates an acoustic environment by using delay lines, loops and filters. Recreate anything from a small ambient space all the way to a canyon!

- **Damping:** Reduces the level of high frequencies and shortens their decay time.
- **Pre-Delay:** Adds a delay before early reflections are heard.



### *Convolution Reverb*

Convolution reverb runs a model of an actual acoustic space like a club, church, or concert hall. It's based on impulse responses – recordings of a sharp transient sound (think starter pistol or drum hit) in those spaces. The sound of your instrument then sits in for the original sound in a number-crunching process called convolution.

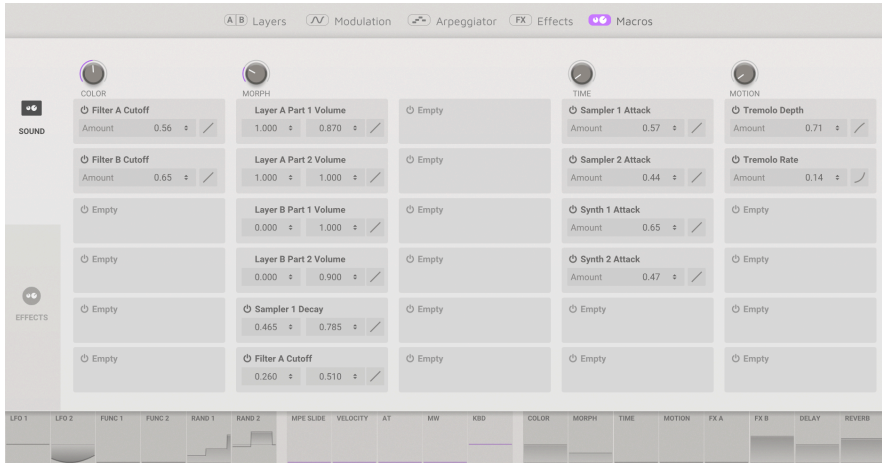


### *Convolution Reverb list*

29 spaces are available from the classic church and concert hall to the more far out flight to mars or water drive. Select your space, sit back and enjoy.

- **Input Gain:** Adjusts the gain of the signal coming into the Convolution Reverb.
- **Room Type:** Choose from 29 virtual spaces.

## 6.5. Macros



*Macros Tab*

Macros are the heart and soul of Augmented STRINGS, enabling us to set one control to change many parameters simultaneously. By using the side tab, we can select between the Sound and Effects macros. The controls for these are presented on the main page of Augmented STRINGS.

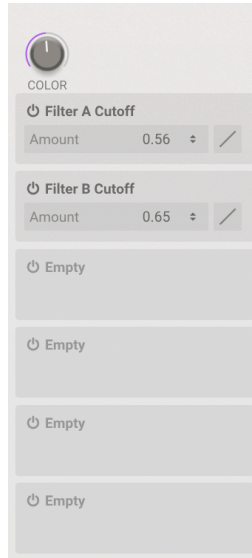
- **Color** This macro affects the color and harmonic content of the sound. This means the sound engine and filter parameters, of each layer. Select up to 6 destinations to change the texture of your sound.
- **Morph** Allows you to morph between Layer A and Layer B. Select up to 8 parameters freely assignable between both layers, to transform your sound.
- **Time** Changes the timing of the preset. Select up to 6 destinations to change the envelope parameters of each layer.
- **Motion** This macro allows you to add movement to your sound. Assign up to 6 parameters from the Modulation and Arpeggiator Tabs.
- **FXA** This adjusts various parameters linked to the insert effects, directly effecting Layer A.
- **FXB** This adjusts various parameters of the insert effects, directly effecting Layer B.
- **Delay** Add movement to your sound with delay. This macro can control any effect parameter including the amount of wet/dry mix. Delay is an insert effect on the Master bus and the first FX in the chain.
- **Reverb** Add space to your sound with reverb. This macro can control any effect parameter including the amount of wet/dry mix. Reverb is an insert effect on the Master bus. Reverb follows Delay in the FX chain.

To assign a parameter to a Macro, click one of the panes in the visual strip that runs along the bottom. Text will appear with information on which parameters you can route. These will then be highlighted in purple on the relevant tab, allowing you to assign to the selected Macro, Modulator or Keyboard setting.





## 6.5.1. SOUND



*Assignable Parameter Slots*

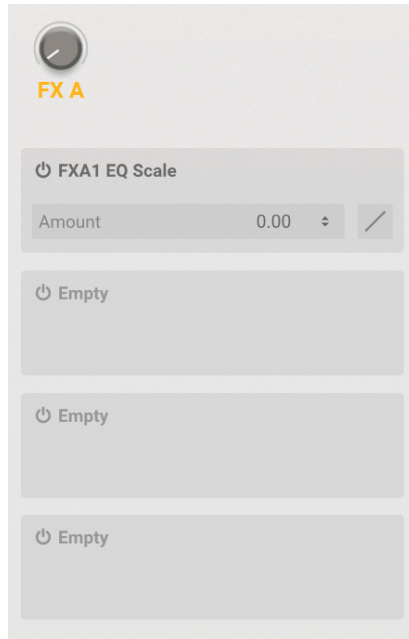
On the Sound page we can assign up to six parameters to be controlled by the associated control above, although the Morph macro has eight. Once you have selected the parameter, within each slot you have the following settings:

- **On/Off:** Enables and disables the Macro's routing to the destination - without removing it entirely.
- **Amount:** Drag up or down on the number field to set the amount of the - Macro's effect on the destination.
- **Curve:** Drag on the adjacent curve icon to adjust the curve of the Macro's effect on the destination.

To set the amount of parameter of the macro to a destination, hold your mouse over its numeric amount or contour will then turn your cursor into up/down arrows which then allows you to increase or decrease the value. Dragging on the contour sets the depth, the same as doing so in the numerical box described above.

The Sound Macros can in turn be modulation destinations, allowing for very expressive playing. Velocity, aftertouch, the modulation wheel and keyboard tracking are the eligible sources.

## 6.5.2. EFFECTS



*Assignable Parameter Slots*

On the Effects page we can assign up to four parameters to be controlled by the associated control, above. Once you have selected the parameter, within each slot you have the following settings:

- **On/Off:** Enables and disables the Macro's routing to the destination - without removing it entirely.
- **Amount:** Drag up or down on the number field to set the amount of the - Macro's effect on the destination.
- **Curve:** Drag on the adjacent curve icon to adjust the curve of the Macro's effect on the destination.

To set the amount of parameter of the macro to a destination, hold your mouse over its numeric amount, this will then turn your cursor into up/down arrows which then allows you to increase or decrease the value.

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