



ARCTIC STRINGS

Cinematic and Atmospheric String Library

Arctic Strings is a cinematic string library designed from the ground up for realistic, easy to use sustained strings. It features flexible scripted legato and portamento/ glissando. A big part of Arctic Strings is the beautiful and expansive GUI that aims to inspire you as you play.



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MAIN PAGE

This page contains the essential controls for setting up the sound. I think that the visuals of a sample library are often a great inspiration for the music. For Arctic Strings, I have aimed to create a beautiful ethereal, icy atmosphere. You will notice the night sky light up with the impressive aurora borealis as you play.



REVERB

Arctic Strings comes with a built in convolution reverb effect. There are a selection of impulse responses for you to choose from a drop down menu. The impulses marked 'FX' are unusual reverb effects, while the 'RL' are real emulations of halls and room.

'Reverb Mix' determines the mix of wet/ dry signal. For a 100% dry sound, pull the slider left, and right for 100% wet. Impulse menu – here you can choose the IR of the reverb.

ENVELOPE

The envelope allows you to shape the attack and release of the strings. This is only active when legato is turned off. Simply grab one of the white circles and pull right or left to change the shape.

HARMONISE

You can easily create beautiful string harmonies using these controls. The harmonies will also work with the legato and portamento buttons on.

The 'harmonise' menu can be turned on with the adjacent button. This will then automatically create the harmony you have chosen above the note you play.

To make the harmony more musical, you can lock the notes to a key and scale. Any out-of-key note will jump to the nearest in-key note.

MAIN PAGE (CONTINUED)

DYNAMICS

The dynamics slider crossfades between a soft piano sample to a forte. This is set to CC1 by default, to change it, right click the slider and select 'Learn MIDI CC', then move the controller you want it to be.

LEGATO

Arctic strings has an incredibly advanced customisable legato engine. You can set up keyswitches and CCs and change the legato speed on the settings page. As well as this, you can use various parameters such as your playing speed and note interval to dynamically change the legato. The sound will be good to go out of the box, but if you are interested you can access these controls on the settings page. The button is green when legato is on, and grey when not.

PORTAMENTO

The portamento engine is an extension of the legato engine that can be tweaked in the settings page. It is capable of doing portamento and also slow glissando. It works by creating 6 new voices that play for the transition and slide the pitch between the notes. The portamento is only functional when legato is on.

DISPLAY

The grey box at the bottom will show the readout of the last moved control.

SETTINGS

This button switches between the main page, and the settings page.

NOTES ABOUT CCs

The internal engine of Arctic Strings uses 4 CCs to perform various functions. Please do not use CC17, CC18, CC19 or CC20.

CC11

CC11 (expression controller) is hard programmed into the script as an additional volume control for the strings.

SETTINGS PAGE

This page is for the advanced controls of the legato and portamento engine. It is also the place where you can set up keyswitches.

MONITOR

This is a simple table that shows you your current velocity, playing speed and note. The playing speed is arbitrary number from 1 to 127, smaller numbers indicate that you are playing fast. This monitor is useful for setting up lines in the modulation matrix.

LEGATO TIME

This is the time of the legato transition in ms. Higher values mean that your current note will take longer to transition into the new note. A speed of about 90ms is normal.

PORTA TIME

Speed of portamento transition in ms. When porta is on, it takes the players time to slide up the necks of their instruments, so a value of 400ms is more appropriate. This time can be modulated using the matrix.

Below the main slider, there is a small white bar, this represents the actual value of the control. If you are using the modulation matrix, it is useful to see the actual value that is outputted.

SAMPLE OFFSET

This slider offsets the start time of the sample. Larger values will push the start time further into the sound. This slider can almost work as an 'attack', if you want a slow attack then set a low sample offset value. If you want a sharp attack, move the slider to the right.

Arctic Strings

Output: st. 1 | Voices: 0 / Max: 200 | Memory: 424.08 MB

MODULATION MATRIX

Velocity	is	Below	25	then	Porta Button	is on	Force Both
NONE							
Keyswitch	on:	C#-2	off:	D-2	Legato Button		
Speed	from	1	to	18	modulates	Offset	from 10 to 10
Interval	from	1	to	24	modulates	Porta Time	from 1 to 36
NONE							
Special					Dynamics Volume		100 %
NONE							

MONITOR

VELOCITY	
PLAYING SPEED	
NOTE	

LEGATO TIME

PORTA TIME

SAMPLE OFFSET

DYNAMICS

LEGATO PORTA

Strings Effects

MODULATION MATRIX

The modulation matrix is a system that allows easy assignment of modulation. It consists of 8 lines, each can be a different modulation. The modulation matrix will most commonly be used to assign CCs, keyswitches or velocities. The system is quite intuitive and is therefore accessible to every level of user. The controls will rearrange themselves to display only what is necessary. The best way to get a grip of this tool is to just experiment with it! However, I shall explain how it works here.

Each line reads almost like a sentence, from left to right. The first parameter to choose is the source. This is chosen with the menu on the far left:



From the menu you can choose which input you would like to use to do the modulating with. If 'NONE' is selected, the line becomes inactive. Depending on what you select, the rest of the line will populate to show you the available controls:



After the source is set, the next important parameter to choose is the destination. This is selected from the menu in the middle of the line:



This list will show different items depending on the source. The line is now set up, the only things left to choose are the exact values. The source menu and the destination menu are constant, however the other controls will work in 1 of 4 ways: Standard, button, keyswitch or special.

MODULATION MATRIX

Standard

The standard pattern will look like this:

<source> from 1 to 127 modulates <destination> from 1 to 100

This happens when a continuous source (something that produces a number between 1 and 127 e.g. velocity or CC) modulates a continuous destination (something that receives a value between 1 and 100 e.g. offset or porta time). The first 2 numbers are the minimum and maximum of the source. These set the range that you want to use for modulation. Any inputs out of this range will be ignored. This is useful for if you don't want linear modulation, you can set up 2 lines to create a different contour. For most situations you will want to use the full range of of the source 1 to 127.

The second set of numbers are the minimum and maximum for the destination. In other words, how much intensity the modulation will have. To help you see what is going on, you can look at the white bars beneath the legato time, porta time and sample offset sliders. This bar shows the actual value of the slider after modulation. The sliders set the start point, any modulation will be added onto that. I will use the values in the screenshot above to explain how the intensity works.

At source value 1 the intensity will be 1

At source value 127 the intensity will be 100

In other words:

At the minimum source value the intensity will equal the minimum destination value

At the maximum source value the intensity will equal the maximum destination value

Here is an example of how you might set up a modulation using 2 lines:

CC 1 from 1 to 64 modulates Offset from 1 to 35
CC 1 from 65 to 127 modulates Offset from 36 to 40

Here CC1 will modulate the offset very fast for the first half, an slowly for the second half.

MODULATION MATRIX

Button

The button pattern will look like this:

<source> is Below 25 then <destination> is on Force Both

This happens when a continuous source modulates a button. A button can either be ON or OFF so to modulate it we need to set a value and choose whether inputs above or below it should turn the button on.

The 'force' menu is only relevant if you are using multiple sources to modify the button (velocity AND cc for example), and should be set to Force Both for all other scenarios.

Lets use this example to explain the Force menu: you want to have an interval of an octave (12) or more to always turn the porta OR a velocity below 30. Each line of the modulation matrix is not related, however the engine reads it from top to bottom. This means the lines at the bottom will be read after the lines at the top. This is important when dealing with buttons. In order to get the interval and the velocity to trigger the button, we need to make 2 lines. To stop the one at the bottom from having priority, we need to use the force menu.

For this example the velocity line goes above the interval line:

Velocity is Below 30 then Porta Button is on (force both)

Interval is Above 12 then Porta Button is on (force on)

If we were to select force both for the second line, the velocity line above would be ignored, because intervals below 12 will force the button off, and above will force the button on.

Now if we choose force on, only the 'on' will be forced, the 'off' will have nothing done to it. In other words, If you play an interval above 12 the button will be forced on. An interval below will not change the button, it will be on/ off depending on the velocity from the line before.

MODULATION MATRIX

Keyswitch

The Keyswitch pattern will look like this:



The keyswitch is very simple to use. The note assigned to 'on' will turn the button on, the note assigned to 'off' will turn the button off.

Special

The special pattern will look like this:



These controls just have 1 percentage control. Here is a list of the available options:

- Velocity Volume – how much velocity should effect the volume. If you do not set a value the velocity will be 0.
- Legato Release – add a special release to the legato transitions so the old note takes longer to fade out. If this special control is not present on the mod matrix the legato will transition like normal.
- Legato Vol Dip – add a dip in volume for the legato transition. There is no volume dip by default.
- Dynamics Volume – the amount volume should be affected by the dynamics slider. Default is 90%.

PORTAMENTO PITCH CURVES (ADVANCED)

Pressing the small arrow button on the left below the matrix will show the controls for the portamento pitch curves. This was originally something that I used in development. I have included it in the interface because there are perhaps some advanced users that will find it useful.

HOW THE PORTAMENTO WORKS

With legato ON and porta OFF, if you overlap 2 notes the volume of the older note will crossfade out and the volume of the new note will crossfade in. Now with both legato and porta ON, the same thing will happen but for the duration of the transition 6 new voices will be generated, and the pitches of them will slide. This means that for the transition time there are 8 voices (1 old note + 6 temporary voices + 1 new note).

When a real string ensemble do glissando or portamento, the players are not exactly in sync. This creates a 'slur' in the pitch as they all slide at slightly different rates. To emulate this, the 6 extra voices are created, each to represent a real player sliding the note at a different rate.

You may now see the link between this and the 8 pitch curves. The x axis is time, from time=0 to time=100. The y axis is pitch, from 0=old pitch to 100=new pitch

One other point worth mentioning is that pitch curves 1 to 4 work slightly differently to curves 5 to 8. Curves 1 to 4 are voices that crossfade down to silence, at time=0 they are loud and at time=100 they are silent. Curves 5 to 8 crossfade up from silence, at time=0 they are silent and at time=100 they are loud.

The 'curve set' menu is used to store 2 sets of curves. Any changes you make to the curves will be stored with that set. Using the mod matrix you can switch between these sets of curves.

