

ACOUSMATIC ENGINE

User Manual



CYMATIC FORM

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Welcome

My name is Jeremiah Savage, creator of Acousmatic Engine and founder of Cymatic Form. Thank you for purchasing Acousmatic Engine and taking the time to learn about the many possibilities of this instrument. The purpose of this manual is to give you the information needed to explore the beauty and depth of these carefully crafted sound instruments, as well as the many sound possibilities within. I will also explain the motivation and ideas behind this unique instrument.

If you are familiar with my previous Kontakt Instruments such as Kinetic Metal and Kinetic Toys released with Native Instruments you will find this instrument familiar but much evolved in many ways.

Concept and Creation

Acousmatic Engine is not your typical sound instrument. I have always been interested in sound and how it relates to interesting concepts, emotions, environments, cinema and of course music in general. In order to give a more manifest connection to imaginative themes through sound, careful planning is done in selecting an overall concept so I can paint its world with the colors of sound design. Through field recording, seeking out interesting sounds, instruments and objects that relate to the concept and recording them using various mic techniques, cutting and processing those samples then surgically implanting them with advanced synthesis design. And with those conceptual ideas and methods, I've built an interface that ties everything together into a cohesive instrument that allows for deep variation and exploration of the sounds while respecting the unique nature of this process and the overall concept.

My goal is to expand the possibilities of synesthetic connection of themes and sound to give the user a unique experience and new inspiration in writing music with unique tonal flavors and textures derived from imaginative ideas. This complex process is a labor of love that always challenges me to keep getting closer to making tangible the sounds I have in my head.

Installation/Activation

After purchasing Acousmatic Engine you should have been automatically directed in your browser to download the compressed Acousmatic Engine file. You will also receive an email confirming your purchase with the download link and serial number.

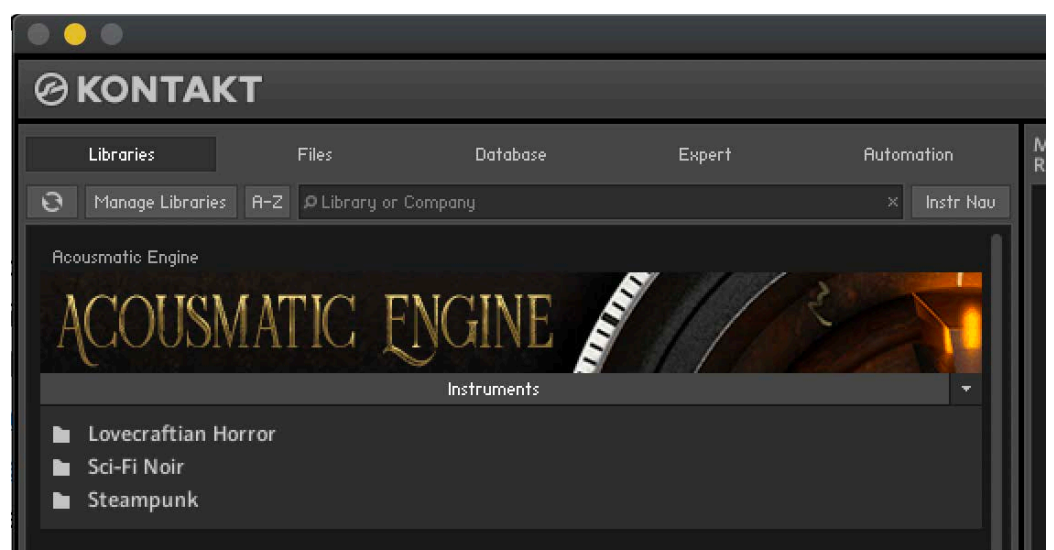
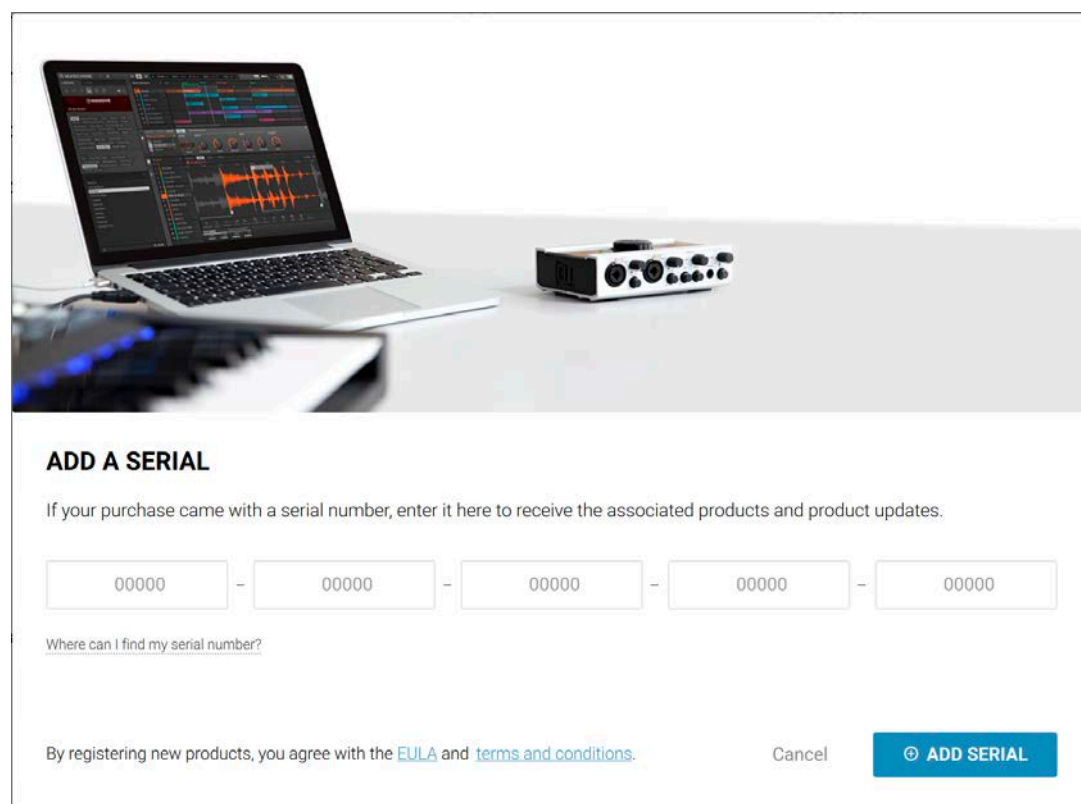
After uncompressing the Acousmatic Engine file, place the folder where you would like on your hard drive (many users have a dedicated hard drive for sample libraries). You will need to open Native Instruments Native Access (if you don't have it already download it here:

<https://www.native-instruments.com/en/specials/native-access/>) then add the serial number you received for Acousmatic Engine to activate.

Native Access will ask you to navigate to the Acousmatic Engine installation path (where you placed it on your hard drive).

After this you should now be able to open up Kontakt or the Free Kontakt Player and see Acousmatic Engine in the Kontakt browser. From here you can load instruments from the different categories and start using Acousmatic Engine. If you don't already own Kontakt or haven't

downloaded the Free Kontakt Player, you can download it here: <https://www.native-instruments.com/en/products/komplete/samplers/kontakt-6-player/>



Sounds

There are 3 main sound themes included in the initial release of Acousmatic Engine each of which I find intriguing for sound and am personally passionate about. There is a total of 500 presets that include hundreds of source sampled materials, over a thousand samples and many hours spent processing and forming them with creative synthesis programming. Each preset also offers 3 variations programmed in the Warp Wheel that can be warped between, greatly expanding the sonic possibilities of each sound. The engine behind Acousmatic Engine allows for a huge range of stylistic variation with possibilities for even more expansion packs later on. The three themes included in this release are:

Steampunk

Lovecraftian Horror

Sci-Fi Noir

Once you choose a stylistic genre, select from 5 recognizable instrument types:

Aerophones - Wind instruments and anything that vibrates with air pressure.

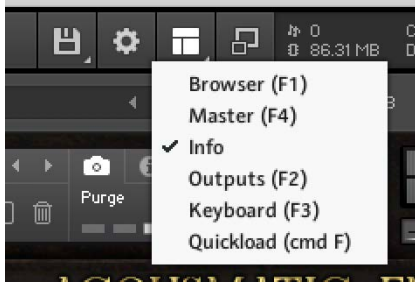
Friction - Anything that acts as resistance of one object or instrument moving over another to produce sound. Bowing, scraping, even pad-like sounds, etc.

Struck - Instruments that are percussive such as bells, pianos or anything that is struck to produce sound or noise. Can be combined with other articulations such as Friction, etc.

Soundscapes – Sounds that may or may not be tonal and give a sense of environment or mood.

Machines/Movements - Arpeggiator and sequenced driven patterns or other movements.

Quick Start



Hover over any control in the GUI with your mouse to get more information about it in the bottom pane of the Kontakt interface. Make sure the Kontakt interface is not minimized and **Info** is checked in the **Workspace Management** menu.

Interface - General Layout



The interface consists of the Main Section (always visible) in top half of the GUI with important controls including the Warp Wheel and the bottom half that offers 5 different pages that can be switched to by clicking the 'Expert' button at the top of the GUI and the tabs that run along the middle of the GUI. Those tabs are:



Mixer



Effects



Arpeggiator



Settings

Top Main Section



The Main Section, located on the top half of the GUI, is always visible and features important controls that have a dramatic effect on the overall sound.

Expert View Button:



When not engaged the Expert button gives you a simple view of the interface with 6 Macros displayed in the bottom section (assignable in Expert mode - Settings tab). When the Expert button is engaged you have access to all controls to edit and create your own sounds.



Electrics/Acoustics/Resonance:

The **Electrics Volume Control** changes the overall volume of Electrics layers 1-8 set in the Mixer page.



Below the Electrics Volume Control is the **Electrics Pitch Control** which changes the global pitch for all Electrics layers from -12 to +12 semitones.

The **Acoustics Volume Control** has the same function as the Electrics Volume Control but is used for the overall volume of the Acoustics layers 1-8 in the Mixer page. The **Resonance Control** is a special parameter that adds harmonic resonance to all the Acoustics samples, greatly enhancing the musical possibilities of these Acoustics sample layers.

Below it is the **Resonance Pitch Control** which changes the Resonance Pitch from -12 to +12 semitones.

(See the section on **Pitch & Harmonic Resonance Mode** for more information on how to manipulate the harmonic series for individual Acoustics layers).

Articulation/ADSR:



On the far right of the Main Section are the controls for the shape of the overall sound.

Articulation gives the instrument a unique dynamic shape or motion. Each instrument has different pre-programmed articulations that suit its character.

The next two parameters set the global envelope (**Attack, Sustain, Decay, Release**) for each instrument. You will notice an up/down arrow on these parameters. This allows you to toggle between different ADSR controls to save space in the GUI. You can adjust each of them as needed to give different shapes to each instrument.

Warp Wheel

Perhaps the most important of all parameters in Acousmatic Engine is the **Warp Wheel**. As the graphic suggests there are multiple controls in this device that can give you incredible dynamic and performance control over most of the parameters available. See below for detail into what each parameter can do.



Variation Edit Buttons (Multi-function):

The Variation Edit Buttons (visible in **Expert mode**) save settings of storable controls so that you can warp between them using the Warp Wheel knob. The controls you can store in these Variation Edit Buttons are: **Volume, Pan, Sample Offset, Grain & Grain Time** controls in the Mixer page (See Mixer page for more info on these parameters) and the **6 black Macro knobs** in the Settings page.

There are 4 ways to save storable controls to the Variation Edit Buttons.

- 1) Click the Variation Edit Buttons to enter edit mode then change the values of the storable controls (mentioned above) to save to each edit button.
- 2) Change the storable controls first and then Alt-click on the Variation Edit Buttons to store the current positions of all storable controls in that specific Variation Edit Button (This is useful if you forget to engage the Variation Edit Buttons first and want to save your settings).
- 3) Alt-click on individual storable controls to save their state to all variations buttons at once (useful if you want a parameters setting to remain static through the different stages of the Warp Wheel).

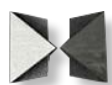
4) Copy/Paste the state of one Variation Edit Button to another by first clicking on the one you want to copy then Alt-click on the one you want to paste it to.

Warp Wheel Control:



This control warps through the stages of the Variation Edit Buttons, smoothly transitioning from one saved state in each Variation Edit Button to the next. Unlike many knobs this one goes all the way around from the 12 o'clock position all the way back to it. This allows you to warp from the first Variation Edit Button both directions.

Warp Start/End Offset Controls:



These controls allow you to offset the start and end positions so, for example, you could begin warping from the 2nd Variation Edit Button to the 3rd. The triangular control on the left is the **Start Offset Control** and the one on the right is the **End Offset Control**.

If you set the Start Offset Control all the way up and the End Offset Control all the way down, you can reverse direction of the Warp Wheel.

Record/Playback Motion Button (Multi-function):



The Record/Playback Motion Button allows you to record movements of the Warp Wheel using your Mouse or Mod Wheel and play the recorded motion back, allowing for hands free dynamic control (See the **Note Retrigger** and **Velocity Retrigger** controls in the Settings page for more playback options).



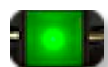
When no data has been recorded the **Record/Playback Motion Button** will be dark with a small orange light signifying there is no recorded data to play back.



When you click on the Record/Playback Motion Button the orange light becomes bright signifying you are in **Record Arm Mode** ready to record.



To record, play a note on your keyboard then move the Warp Wheel with your Mouse or Mod Wheel. At this point the Record/Playback Motion Button will change to Red, signifying you are in **Record Mode** and recording motion data. You can record up to 45 seconds of data.



When you release the note or when 45 seconds have passed, record mode will turn off and you will automatically be in **Playback Mode**. At this point you can play another note on your keyboard to play back and loop the motion you just recorded. If you click the green Playback Motion Button at this point you can turn off or stop playback. Click again, will turn it back on.



Command-click Mac, Cntrl-click PC on the green Playback Motion button to enter **One-Shot Mode**. This will play your recorded motion and stop at the end of it instead of looping. Command/Cntrl-click to turn off or stop playback and Command/Cntrl-click again to turn it back on. Regular click on the white One-Shot Mode Button switches back to Playback Mode.

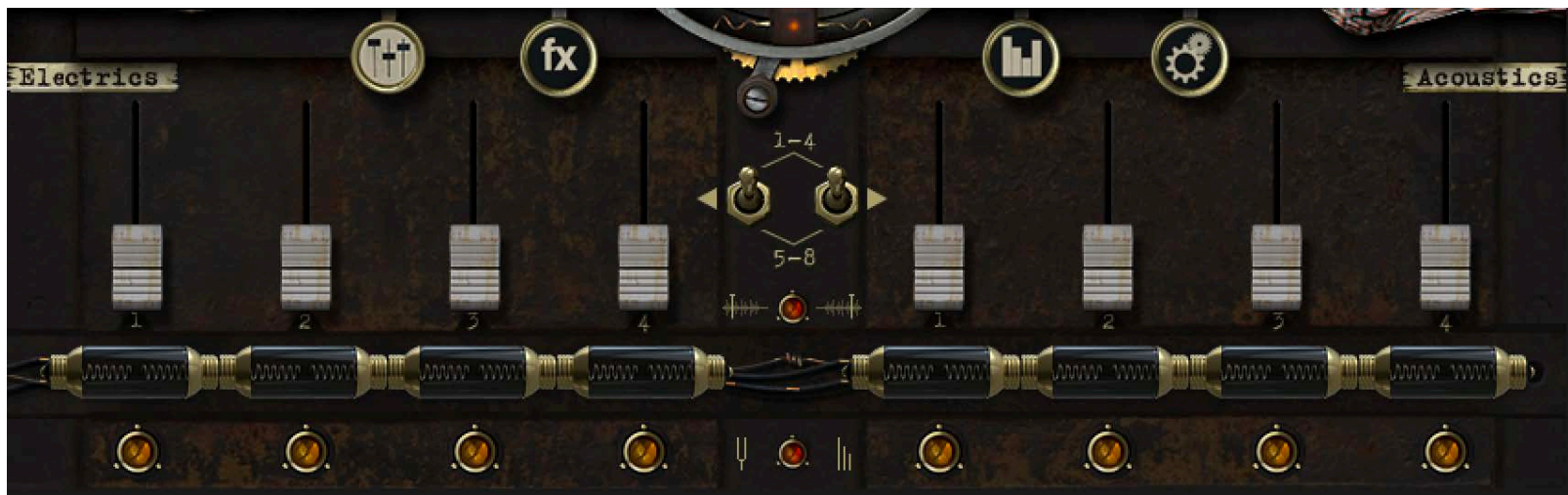
Atl-click on Record/Playback Motion Button clears recorded data.

Playback Motion Speed:



With this control you can change the speed of the Recorded Motion Playback.

Mixer Page - General



The Mixer page is where you can combine samples and synthesis to create beautifully flexible and unique instruments and soundscapes that expand the possibilities of what is traditionally done in samplers or synths alone.

Add and mix (Volume and Pan) different layers of Electrics and Acoustics samples and Mute/Solo different channels. You can do a number of other things to each individual channel, such as: setting the sample start point on each channel, change harmonic resonance to individual Acoustics samples, change individual pitch of Electrics channels and change the sampler engine to a Grain engine that gives an entirely new flavor of possibilities to the samples.

Electrics The left side of the Mixer page is labeled Electrics. This contains all the layers created by synthesis.

Acoustics The right side of the Mixer page is labeled Acoustics. This contains all the layers of sampled content for that instrument.

Most of the Acoustics channels have velocity layers of sampled content for more realistic and dynamic sound and playability.

Mixer Page - Parameters

Mute/Solo Buttons (Multi-function):

Activate, Mute or Solo any given channel.



To activate a channel simply click on the **Mute/Solo Button** until it lights up with an orange light. Command-click Mac, Cntrl-click PC on any Solo/Mute Button will activate all channels. Command/Cntrl-click again will deactivate all channels.



To Mute click on an active channels **Mute Button** and the light will go dark. This also deactivates those voices from the overall voices used lessening CPU usage.



Solo any channel or multiple channels by Alt-clicking on the **Solo/Mute Buttons**. It will then light up yellow. You can click again to un-solo the channel and the rest of the channels will reset to their previous states.

Electrics/Acoustics Channel View:



The **Channel View Switches** show Electrics/Acoustics channels 1-4 or 5-8. The left switch changes the view to the Electrics channels and the right switch changes the view to the Acoustics channels. The channel number is displayed under each Mixer Volume slider.

Mixer Volume Control:



The mixer **Volume Slider**, when activated with the Mute/Solo Buttons, will light up and get brighter as you turn the volume up and dimmer as it is turned down.

* This control setting can be stored in the Warp Wheel Variation Edit Buttons.

Mixer Pan Control:



Pan each channel left or right to add stereo depth.

* This control setting can be stored in the Warp Wheel Variation Edit Buttons.

Show/Hide Sample Offset Controls:



Toggle the visibility of the Sample Offset Controls which show up next to the Mixer Volume sliders.

Sample Offset Control:



Set the sample start position of each channels sample. Offset the start position of the sample up to 100% of the sample length for interesting sample dynamics.

* This control setting can be stored in the Warp Wheel Variation Edit Buttons.

Pitch & Harmonic Resonance Mode (Multi-function):



Click to display the pitch control for each Electrics channel and the Harmonic Resonance parameters for each Acoustics channel. Un-click to display the Solo/Mute Buttons (See Grain & Time Mode below for Multi-function use).



The Electrics Pitch can be changed on each channel from -12 to +12 semi-tones. You can scroll or type in the value.



Set the fundamental octave (on the Acoustics channels) of the Resonance Pitch (-1, 0 and +1) by first clicking on the Yellow Bar then changing the value either by typing or scrolling the number value.

You can also change the Harmonic Series of the Resonance Pitch using the other two colored bars. The Gray Bar represents the 2nd Harmonic Series and the Red Bar represents the 3rd Harmonic Series. You can change the pitch of those by clicking on the respective bar and entering the pitch value (from 0-60) or scrolling in the value edit field.

To change the intensity of the resonance on each channel drag the respective colored resonance bar up or down.

Grain/Time & Sampler Mode (Multi-function):



When Alt-clicked, this lamp displays the **Grain/Time** settings for each channel. The lamp will change to a white light and show the icons for



the **Grain/Time mode**. Alt-click again to toggle between **Grain/Time** and **Pitch & Harmonic Resonance modes**. A regular click will go back

to displaying Solo/Mute Buttons.

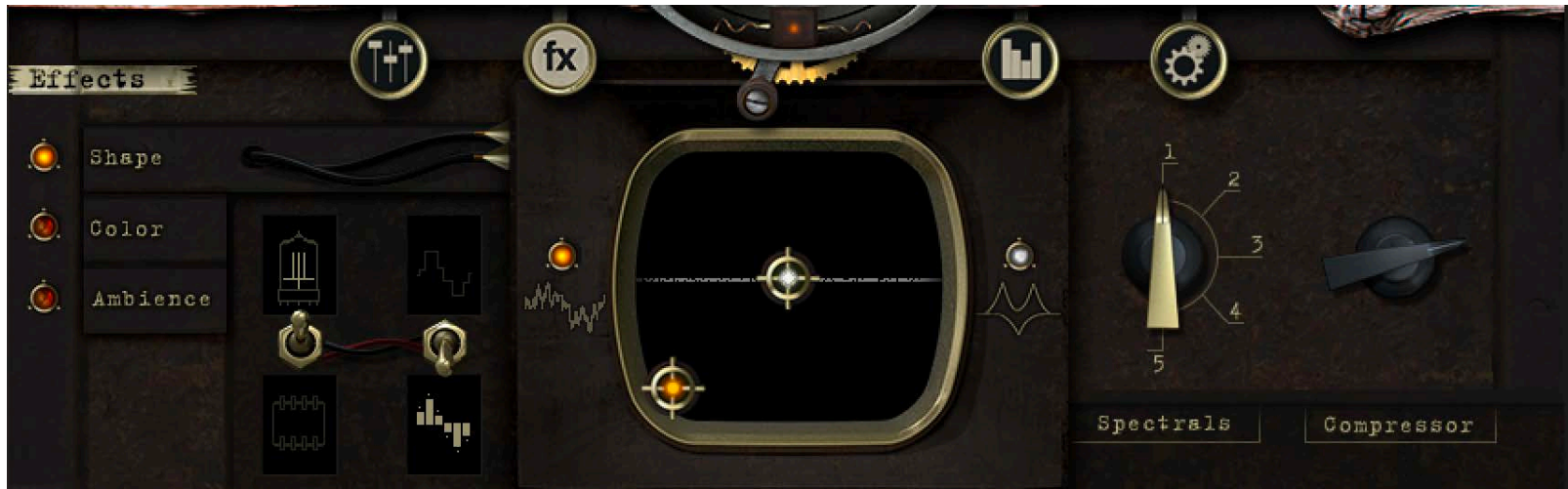


Toggle between **Sampler mode** and **Grain/Time mode**. Click on the de-active grey lamp under each channel to activate the Grain/Time controls (it will then turn white when Grain/Time mode is active. Click again to deactivate and revert to Sampler mode.

In **Grain/Time mode**, there are two bars on either side of the white lamp. The Yellow Bar controls the **Grain Speed** and the Gray Bar controls the **Grain Time**.

* These control settings (Yellow and Gray Grain/Time bars) can be stored in the Warp Wheel Variation Edit Buttons.

Effects Page - General



The Effects page contains 3 pages of effects. Click the Shape, Color or Ambience lamps on the left hand side of the Effects page under the Effects label to switch between them. Each Effect page can be divided into 3 sections consisting of effects which can be controlled in the XY Effector Display. The XY Effector displays an animated graphic for each effect making the effect more visually tactile and intuitive.

Effects Page - Shape

The Shape Effects page has two Distortion effects, two Rate Reduction effects, a Spectral Filter and Compressor.



On the left side of the page are the Distortion settings. Switch between **Tube** and **Transistor** Distortion effects and **Bit Rate** and **Sample Rate** Reductions effects.

To control their parameters use the Shape Effector Cursor in the XY Effector Display. The color of the XY cursor matches the On/Off lamp of that specific effect. The Orange XY cursor effects the Distortion and Rate Reduction parameters.

When dragging the cursor in the Y direction you will see a TV static animation effect that represents Distortion Amount. Drag the cursor in the X direction, a glitch effect animates in the static representing the Rate Reduction effect.



The White cursor effects the **Spectral Filter**. Drag it in the Y direction to make the Spectral Filter more prevalent. Drag it in the X direction sweeps through the frequencies in the direction you choose.



On the right side of the page you can select from 5 different Spectral Filter shapes for different spectral flavors using the **Spectral** knob.

The final control in the Shape Effects Page is the **Compressor**. Turn this knob to add compression to the overall sound.

Effects Page - Color

The Color Effects page comes equipped with a **Delay** and 4 modulation effects: **Rotator**, **Phaser**, **Flanger** and **Chorus**.



On the left side of the Color page is the Delay parameters. Select the **Delay Time** in beat divisions of tempo. The **Delay Mix** slider mixes in the Delay amount. The 3rd Delay control sets the Delay routing using the Pre/Post button.

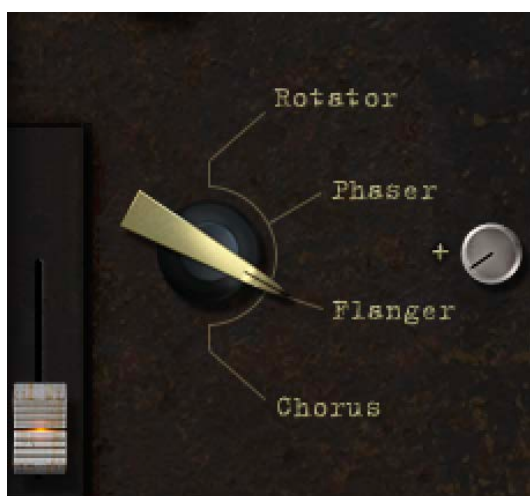
You can change two Delay parameters using the Delay Effector Cursor in the XY Effector Display. The color of the cursor matches the On/Off lamp of that specific effect. The Orange XY cursor effects the **Delay Feedback** and



Delay Damp parameters.

Drag the cursor in the Y direction to effect the Feedback, an animation in the display shows more feedback bars. Drag the cursor in the X direction to apply a Delay Damping effect. An animation represents this by a falling off of the Feedback bars.

The multi-colored XY Cursor effects the specific Modulation effect selected. Use the Modulation Selector knob to change the Modulation effect. The On/Off lamp and XY Cursor color changes based on the selection. Drag the cursor in the Y direction and a graphic representing **Modulation Depth** animates. Drag the cursor in the X direction to effect **Modulation Speed** being graphically represented with more crests and peaks in the animated graphic.



On the right side of the page is the **Modulation Mixer** slider. Use it to add more or less Modulation effect to the audio signal. The **Modulation Selector** knob selects which Modulation effect you want to use. When Phaser or Flanger is selected you get an extra parameter (The gray knob labeled with a '+'), this effects the **Feedback** of those two modulations, routing the signal back into the modulation input.

Effects Page - Ambience

The Ambience Effects page is equipped with Room Types (Impulse Responses) and a Stereo Mic Placement effect.



Use the **Room Type** selector knob to choose between 8 Impulse Response flavors: **Bronze Dome, Wind Cave, Dungeon, Ice Cavern, Wine Glass, Hall Of Mirrors, Coiled Resonator and Wooden Chamber**. A graphic representing its texture is displayed on the "TV Frame"

of the XY Effector Display.

The '**Rev**' button to the left of the Room Type selector knob, reverses the Impulse Response sample.

Control the Room Type parameters using the XY Effector Cursor in the XY Effector Display. The color of the cursor matches the On/Off lamp of that specific effect. The Orange XY Cursor effects the Impulse Response Amount and the Filter Damping parameters.



Drag the cursor in the Y direction to effect the **Impulse Response Amount**. An animation shows the room getting bigger. Drag the cursor in the X direction applies a **Filter Damping** effect. The graphic animation represents this by showing the room getting darker and darker.

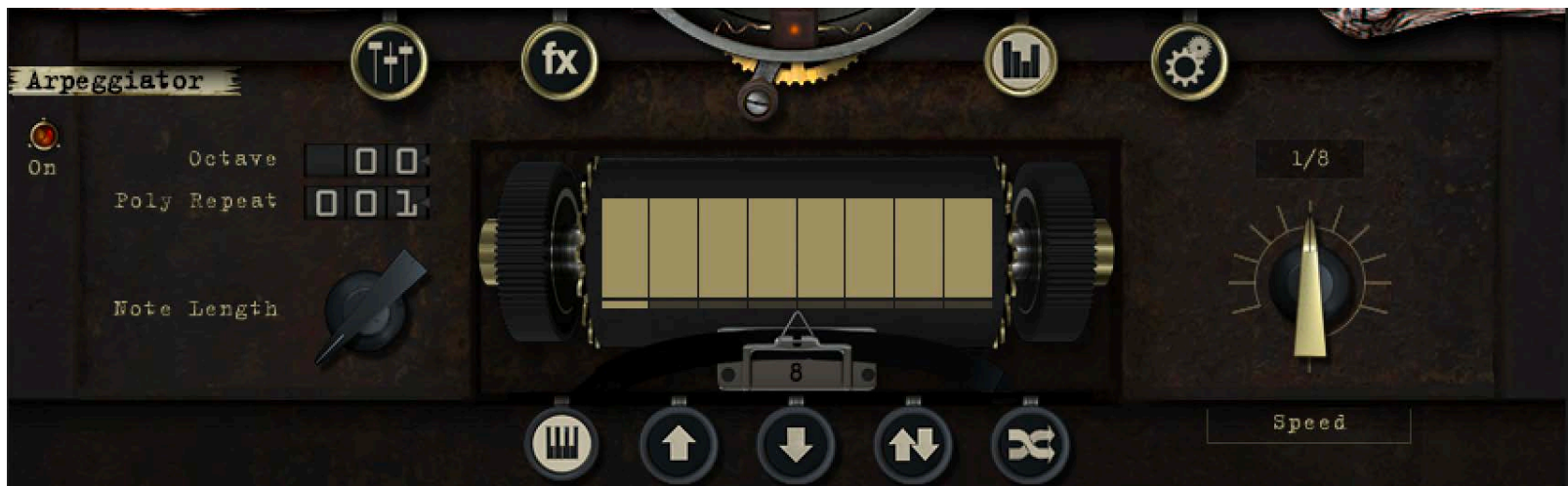
The White XY cursor effects the **Stereo Mic Placement**. Drag the cursor in the Y direction to effect the width of the Microphones giving a wider stereo effect. Drag the cursor in the X direction to change the **Pan** from left to right.



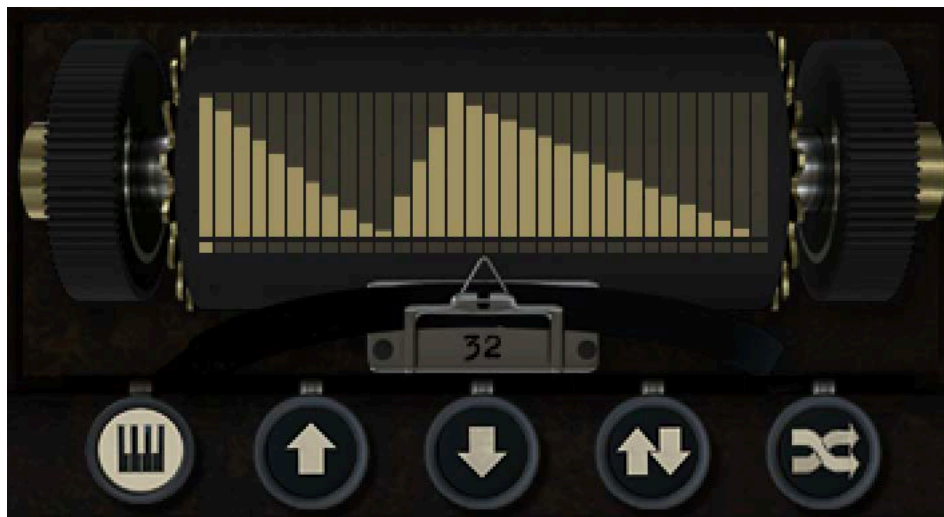
On the right side of the page is the **Room Filter** and **Reflection knobs**. The **Room Filter** can select between 5 settings that filter out either Low or High Impulse Response signals. Select **Allpass** to bypass filtering.

The **Reflections knob** changes the length of the Impulse Response. Turning it up all the way creates longer reflections while turning it down shortens them.

Arpeggiator/Sequencer Page



The Arpeggiator/Sequencer page features a 32 step Pattern Editor with 5 different articulations. Click the 'On' lamp on the left side of the Arpeggiator page to activate the Arpeggiator.



To set the number of steps in the **Pattern Editor** click and drag on "Typewriter Rollers". Alternatively you can drag the number in the key strike area up or down to select the desired number of steps.

Click the Type Keys below the Pattern Editor to select an **Articulation** for the Arpeggiator.



Keyed: The order of arpeggiation is based on the order the notes are played on the keyboard.



Up: Arpeggiation starts on the lowest note then plays the next higher note and so on.



Down: Arpeggiation starts on the highest note then plays the next lower note and so on.



Up-Down: Arpeggiation starts on the lowest note then plays up to the highest note then plays to the lowest note and so on.



Random: The order of the Arpeggiation is based on a randomly generated algorithm.



The **Octave** parameter cycles from played octave to displaced octave. Set it from -3 to +3 Octaves.

The **Poly Repeat** parameter sets the number of repeats of each note played in the Arpeggiator.

When Mono is active in the Settings page this parameter is replaced with Mono Glide. **Mono Glide** glides between notes in the Arpeggiation. You set the glide time with the Mono Glide control in the Settings page.

The **Note Length** knob changes the duration of the Arpeggiated note.



The **Arpeggiator Speed** control sets the speed of the Arpeggiator synced to tempo.

When **Velocity Retrigger** is activated in the Settings page (See Velocity Retrigger in Settings page for more info), the **Warp Sequencer** lamp is available in the Arpeggiator page. When activated, the Warp Sequencer bypasses the Arpeggiator and transforms into a sequencer for modulating the Warp Wheel based on the step settings in the Pattern Editor.



Note, the Warp Wheel **MUST** have a motion recorded for the Warp Sequencer to work (See Record/Playback Motion Button in the Warp Wheel Section for more info).

Settings Page



Use the Settings page to assign several global parameters to fine tune and enhance functionality and dynamics.

Macros:



There are 6 Macros consisting of 4 controls to assign parameters and manipulate in different ways.

Drop Down Menu - Select from several parameters in the Drop Down Menu to assign to each Macro knob.

Bi-polar Range - Represented by the circular bulb graphic, this parameter is based on the initial value setting of the original assigned parameter and allows you to set its offset range to control with the Macro knob.

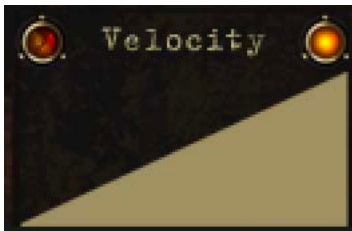
Macro Knob - Change the value of the assigned parameter. The value corresponds to the initial setting of the original parameter settings combined with the Bi-polar Range setting.

* This control setting can be stored in the Warp Wheel Variation Edit Buttons.

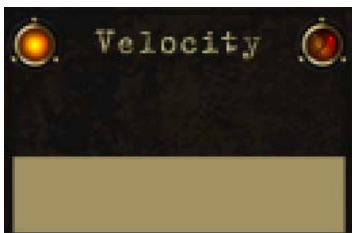
Aftertouch - When Aftertouch is activated (click gray button) you can control the assigned parameter using Mono Aftertouch on your keyboard.

Velocity:

The Velocity control gives you two different options to use for playing dynamics:



Velocity Curve - Drag the Velocity graphic up or down to change the Velocity Curve from harder to softer dynamics.



Fixed Velocity - Drag the graphic up or down to change the static Velocity setting. Playing harder or softer on the keyboard has no effect as this setting over-rides the Velocity Curve. This can be useful for many situations like using the Warp Sequencer in the Arpeggiator page so that the Pattern Editor does not effect the Velocity dynamics but only the effects modulated in the Warp Wheel.

Vibrato:



There are 4 controls to manipulate Vibrato for interesting effects.

Vibrato Wave - Using the Up/Down arrows you can select from 5 different waves: Sine, Triangle, Saw, Pulse and Random.

Vibrato Depth - Changes the strength of the pitch in the Vibrato.

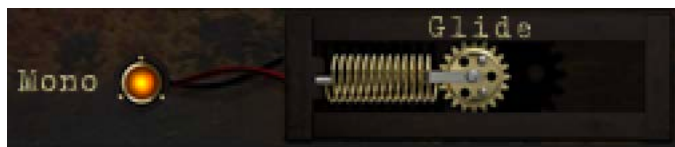
Vibrato Speed - Changes the speed of the Vibrato. Also note the Up/Down arrows. You can toggle this parameter between Vibrato Speed and Vibrato Delay (saving GUI space).

Vibrato Delay - Allows you to set the fade-in time of the Vibrato. Also note the Up/Down arrows. You can toggle this parameter between Vibrato Speed and Vibrato Delay (saving GUI space).

Mono - When Mono is switched on the instrument plays in Mono mode (one voice at a time). When Mono is off it plays in Poly mode (multiple voices). This

control can also be used in conjunction with the Arpeggiator. When activated, the Arpeggiator page will reveal the Mono Glide button. Activating that will create a glide between notes in the Arpeggiator. Setting the Glide control in the Settings page will determine the length of the glide.

Mono Glide:



Sets the glide time between played notes. Only available when Mono is active.

Can be used in conjunction with the **Arpeggiator Mono Glide** parameter.

Pitchbend:



Sets the **Pitchbend** range in semi-tones from 0 to 12 and 24.

Note Retrigger:



When motion has been recorded for the Warp Wheel using the Record/Playback Motion Button, this control triggers the start of the recorded motion on every note played. If the Arpeggiator or Warp Sequencer is active, **Note Retrigger** will trigger the start of the table Pattern sequencer on every note played.

Velocity Retrigger:



When motion has been recorded for the Warp Wheel using the Record/Playback Motion Button, **Velocity Retrigger** triggers the Warp Wheel position based on key Velocity. If the Arpeggiator is active along with this control, the Pattern Editor controls Warp Wheel position. The Warp Sequencer is also revealed as an option to use the Pattern Editor as a Sequencer for the modulation of the Warp Wheel (See Warp Sequencer in the Arpeggiator page).

Midi CC Assignments/Host Automation

You can assign nearly any parameter in Acousmatic Engine to **Host Automation** (See your DAW documentation for how to set that up).

There are also several parameters that you can use with certain **Midi CC's**:

Master Volume - **Midi CC 7**
Master Pan - **Midi CC 10**
Warp Wheel - **Mod Wheel**
Macro 1 - **Midi CC 21**
Macro 2 - **Midi CC 22**
Macro 3 - **Midi CC 23**
Macro 4 - **Midi CC 24**
Macro 5 - **Midi CC 25**
Macro 6 - **Midi CC 26**
Electrics Volume - **Midi CC 27**
Electrics Pitch - **Midi CC 28**
Acoustics Volume - **Midi CC 29**
Acoustics Resonance - **Midi CC 30**
Resonance Pitch - **Midi CC 31**
Articulation - **Midi CC 32**
Attack - **Midi CC 33**
Sustain - **Midi CC 34**
Decay - **Midi CC 35**
Release - **Midi CC 36**
Warp Start - **Midi CC 37**
Warp End - **Midi CC 38**
Record Playback Button - **Midi CC 112**
Record Speed - **Midi CC 39**
Vibrato Depth - **Midi CC 40**
Vibrato Speed - **Midi CC 41**
Vibrato Delay - **Midi CC 42**
Mono Glide - **Midi CC 43**