THE LEGEND

User's Manual

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VST COMPATIBLE

SYNAPSE
AUDIO SOFTWARE
www.synapse-audio.com

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1. Introduction

Thank you for choosing The Legend by Synapse Audio!

The Legend is an analog-modeling synthesizer plug-in, faithfully recreating the most iconic synthesizer of all times.

Developed in cooperation with Bigtone Studios, The Legend marks new territory in analog modeling technology. Every component, ranging from the voltage-controlled oscillators (VCOs), voltage-controlled filter (VCF) and voltage-controlled amplifier (VCA), as well as all parts located in between, have been modeled to an accuracy never seen before in software. Even the effects originating from the power supply have been taken into account.

On top of all this, The Legend offers additional controls not found on the original hardware, greatly enhancing its already impressive feature set. The most significant additions are the Unison and Polyphonic modes, allowing for fat stereo sounds, as well as enabling polyphonic play. Built around a vectorized core, The Legend is capable of synthesizing multiple voices for the cost of little more than a single voice, making it one of the most efficient analog-modeling plug-ins available today.

The Legend is available in VST®, AAX and Audio Unit formats, and supports Multidimensional Polyphonic Expression (MPE), as well as the Native Kontrol Standard (NKS).

1.1. Installation

Installation on Windows

Unzip "legend.zip" and run SETUP.EXE to commence with the installation process. The installer will guide you through the necessary steps. You will be asked to select the location of your VstPlugins directory. Make sure to choose the correct directory for your host software. Refer to your host software's manual if you are unsure about where the host software's VstPlugins directory is located. The plugin file "Legend.DLL" and the manual will be placed in the chosen directory.

Presets will be placed in your user documents directory (Synapse Audio/ Legend). The next time you start your host software, The Legend will appear in the VST instrument list.

If you use a 64-bit host, be sure to provide the proper VstPlugins path for the 64-bit edition of The Legend.

Installation on Mac OS X

Download and open the disk image named "legend.dmg".

Afterwards, double-click on the installer icon to begin the installation process. The installer will guide you through the necessary steps. When starting your host software, The Legend will now appear in the AU and/or VST instrument list, depending on which format your host software supports.

1.2. Activation

After installation, the next step is to provide your license key by using the Activation Tool. On PC/Windows the tool is launched on first plug-in instance insert in your host (UI must be opened). On Mac OS X the tool is launched right after installation is completed.

After typing in the key, you will be asked to activate the license. This is required just once per computer. The preferred way is Online Activation, which requires only a single click. Activation permanently enables The Legend to run on your computer. You may activate The Legend on two computers simultaneously, provided you are the only user of those computers (for multiple users, multiple licenses need to be purchased). Note that when choosing Online Activation, no personal data is transmitted in the process, it is a perfectly safe method of activation.

If you wish to activate The Legend on a computer not connected to the Internet, choose Offline Activation. You will be given a key which you can save to a USB stick or write down on a sheet of paper. Now switch to a different computer with Internet access and log in to your account at:

http://www.synapse-audio.com/support.html

Click on the "Access product activations" link in the "Product activations" section on the left. Enter the key previously stored and you will receive a response code, which you can type into the Offline Activation dialog to complete the installation process.

1.3. Compatibility

The Legend should run on any VST or AU-compatible host and comes with both 32-bit and 64-bit versions. If you encounter any compatibility issues with your host software, do not hesitate to contact us (service@synapse-audio.com).

1.4. System Requirements

In order to obtain a very high sound quality, The Legend employs complex DSP algorithms that are CPU demanding. A modern computer is required to run The Legend.

PC/Windows

PCs require Windows 7 SP 1 or later, a 2 GHz quad core CPU or better, at least 4GB of memory, and a 64-bit host that supports VST 2, VST 3 or AAX plugins.

ProTools 11 or above is required for the AAX version.

Mac OS X

Macs require OS X 10.11 or later, a 2 GHz quad core CPU or better, and a 64-bit host that supports VST 2, VST 3, AAX or Audio Unit plugins.

For Apple Silicon M1 based Macs, a native Audio Unit is available.

ProTools 11 or above is required for the AAX version.

2. Basic Operation

The Legend interface is divided in two pages: A front and a back panel. The front panel contains the main sound parameters of The Legend, while the back panel hosts additional settings, such as trimpots, the pitch bend ranges and two effect processors, Delay and Reverb.

2.1. Interface size
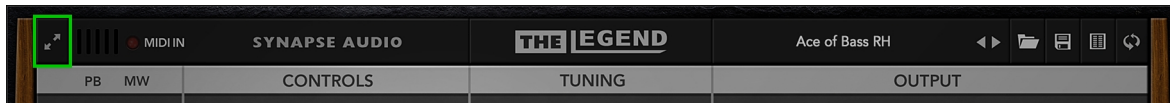
When opening The Legend for the first time, we recommend you to choose your favorite size of the interface. Click the top-left icon and select either "Small", "Medium" or "Large".

2.2. Preset selection
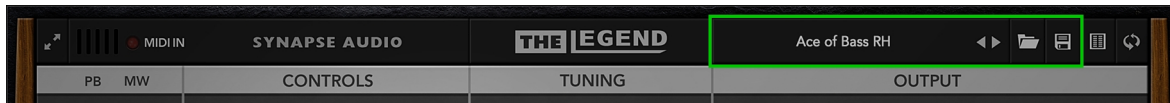
Each musical sound that you can play is called a Patch. A patch is selected by clicking on the preset display on the top-right of the interface. Alternatively the arrow buttons can be used to browse the sounds. The open and save icons allow to open/save individual patches from/to your drive. Patches are stored in the following directory:

Mac OS X: /Library/Application Support/Synapse Audio/Legend/Soundbanks

Windows: Documents/Synapse Audio/Legend/Soundbanks

Each patch is a single Cubase patch file (.fxp), a common format for storing patches. Moreover, The Legend allows to import and export patches in Rack Extension format (.repatch), which allows to interchange presets between Reason and VST/AU hosts.

2.3. Panel toggle
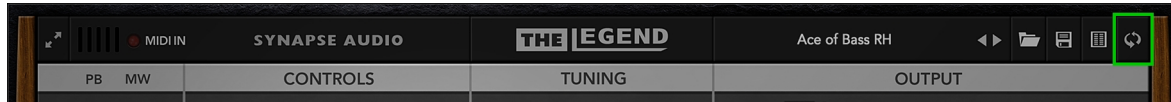
As stated on the previous page, The Legend has two panels, a front- and a back side. The panels are toggled using the icon on the top-right of the interface, or by simply clicking on The Legend's logo.

2.4. Controlling parameters

Knobs, faders, and numerical displays are controlled by left-clicking on them, then dragging the mouse up or down in vertical direction (see fig. 2.4). Hold down Shift while turning knobs to slow down the movement, in order to set precise values. Use Ctrl+Click to set knobs to their default position.
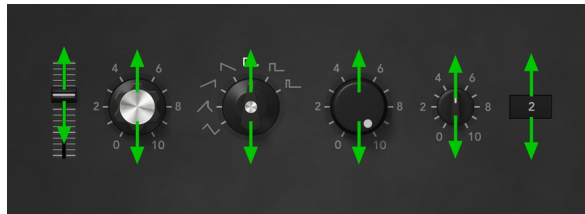
Figure 2.4. Controlling parameters

The mouse wheel is a very useful tool to speed up your workflow, and works on almost every parameter. Use the mouse wheel on numerical displays to increase or decrease the current value. Use the mouse wheel ondrop-down lists, to select the previous or next parameter in the list. Knobs and faders can be fine tuned using the mouse wheel, in the graphical envelope editors it zooms the view.

2.5. Controlling by MIDI

Most controls of The Legend can be remote controlled via MIDI. The default assignments are listed in Appendix B: MIDI Implementation Chart. To override the default assignment, right-click on any knob or switch.

3. Sound parameters

3.1. Overview

Fig. 3.1 shows the overall signal flow of The Legend.
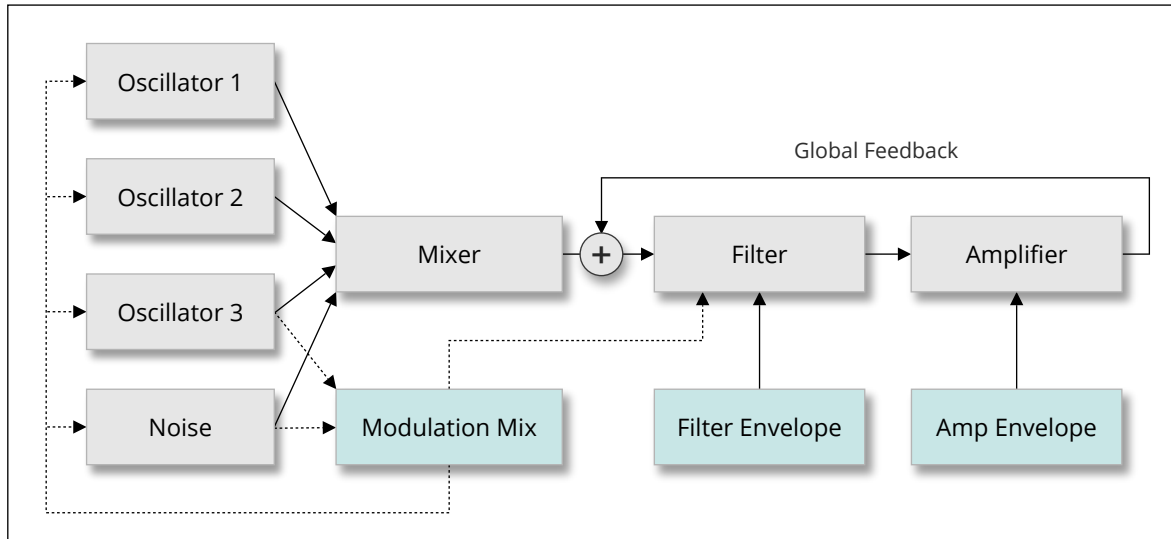
Fig. 3.1. Signal Flow of The Legend

For its sound generation, The Legend uses three oscillators and a noise generator. Those four sources are mixed and then processed by a wide range lowpass filter. The output of the filter passes through an amplifier and is finally scaled in volume by the Master Volume control.

The filter and amplifier are controlled by two envelopes, the Filter and the Amp envelope.

The Legend contains a single modulation source, which is formed by a blend of Oscillator 3 and the Noise Generator (the blend is controlled by the Modulation Mix knob). There is two Modulation targets, the filter's cutoff frequency, and the pitch of all oscillators.

3.2. Front Panel

This chapter describes all sound parameters of The Legend, from the top-left to the bottom-right.

3.2.1. Pitch Bend (PB) and Modulation Wheel (MW)

This section reflects the current state of the Pitch-Bend and Modulation Wheels, typically controlled via a MIDI controller. Note that the modulation wheel directly controls the amount of modulation in The Legend, without any routing matrix in between. Therefore, the state of the modulation wheel is saved with all patches, to ensure all presets sound just like the sound designers intended it. The maximum amount of pitch bending, as well as the maximum amount of modulation can be fine tuned on the back panel.

3.2.2. Controls

Glide

Glide is an important effect in Mono and Unison modes, where just a single voice is audible at a time. When holding down a key then pressing another new key, the voice will glide smoothly from the old pitch to the new pitch.

The Glide parameter adjusts how fast this transition takes place. When Glide is set to zero, the transition is basically instantaneous.

Mod Mix

The Legend uses a blend of oscillator 3 and the noise generator for modulation. The Modulation Mix knob controls the mix of both sources. Note that in order for modulation to be audible, the modulation wheel needs to be set to a value above zero, and either the oscillator pitch or filter must be enabled as a modulation target (see below).

OSC

When the OSC switch is turned on, modulation is enabled for the pitch of all oscillators.

FILTER

When the FILTER switch is turned on, modulation is enabled for the filter's cutoff frequency.

3.2.3. Tuning

Coarse

Adjusts the coarse tuning of the synthesizer in octaves, ranging from -2 to +2 octaves.

Fine

Adjusts the fine tuning of the synthesizer in cents. This parameter is useful to adjust the tuning to a particular range of the keyboard. Analog synthesizers based on voltage-controlled oscillators (VCOs) are usually out of tune, and this can be emulated in Legend via the back panel.

3.2.4. Output

Effects

The Effects switch enables or disables delay and reverb effects. The effect parameters can be adjusted on the back panel (cf. next chapter).

Polyphony

The Polyphony switch controls how many voices are audible in The Legend. MONO is the classic mode used by many analog synthesizers, which allows only a single note to be played at a time. Often this mode is played in a mono-legato style with glide, smoothly gliding from one note to another. UNISON is identical to MONO, except that four voices are played at the same time, for a fatter and wider sound. POLY modes allows to play up to four or eight notes simultaneously.

Detune (Unison mode)

In Unison mode, Detune controls the detuning of the four voices.

Spread (Unison and Poly modes)

In Unison mode, Spread controls the stereo panorama of the four Legend voices played simultaneously, which allows for a very wide sound not possible with most analog hardware. In Poly mode, Spread will pan the first and third voice to the left, the second and fourth voice to the right. This is useful to give polyphonic sounds like a four-voice chord a sense of space.

Volume

Adjusts the Master Volume of the entire synthesizer.

3.2.5. Oscillators

The Legend uses three oscillators as the core of its synthesis, which produce periodic pitched tones. All oscillators share the same sound parameters explained below.

Waveform

This switch sets the waveform shape.

The available waveform shapes are (from bottom left to top right):

- Triangle
- Sharktooth
- Ramp Up
- Ramp Down
- Square
- Wide Pulse
- Narrow Pulse

Range

Adjusts the pitch of the oscillator, in octaves. The labels 32', 16', 8' etc date back to octave pitches in organ stops - in organs, they define the length of the organ pipes.

The LO setting yields a very low pitch, which can be useful either for special effects or when using oscillator 3 as a modulation source.

Semi

Adjusts the pitch of the oscillator in semitones, the range is +/- 7 semitones.

Fine

Detuning two or three oscillators often result in a rich sound. While this can be accomplished with the SEMI knob, its fairly wide range is a problem when precision is desired. This is where the FINE knob comes in, it allows for small adjustments within only a semitone (+/- 50 cents). Note that a yet higher tuning precision can be obtained by holding down Shift while turning the knob with the mouse.

On/Off

Enables or disables the oscillator.

Keytrack

Oscillator 3 has an extra switch to enable or disable key tracking. Disabling key tracking means that the oscillator will not react to MIDI notes played, i.e. the oscillator will maintain a steady pitch. This is particularly useful when using oscillator 3 in LO mode as a modulator to produce vibrato effects.

3.2.6. Mixer

The Mixer section contains the controls to mix the sound source in The Legend. Sound sources include the three oscillators, as well as a noise generator.

Volume

Controls the volume of oscillators 1, 2 and 3.

Noise

Adjusts the volume of the noise generator. A switch just above the knob allows to switch between WHITE and PINK noise. White noise is a type of noise that has a largely flat spectrum, i.e. bass, mid and treble frequencies have equal magnitude. Pink Noise is similar to white noise, except that treble frequencies are attenuated, giving the noise a different character.

Note that Noise is a modulation source in The Legend as well. Its shape is different from the audible noise, however: High frequencies are further attenuated to produce a musically more pleasing result.

Drive

After all sound sources have been mixed, the composite signal is sent to the filter. The Drive knob adjusts the level of the signal going into the filter. This is an important parameter for the overall sound character, since the filter saturates or even distorts the signal at higher Drive levels. Note that even a low Drive setting can result in audible saturation, if all three oscillators are active. In cases where this is not desirable, simply lower the oscillator volumes.

Feedback

Some vintage synthesizers have a jack which mixes external sources to the filter input. This feature can be used to route the master output back to the filter input, creating a feedback loop that way. The results can be interesting and range from subtle saturation effects to chaos. The Feedback knob in The Legend emulates this classic feedback loop, and allows to control the amount of the output signal being fed back to the input. When set to zero, there is no feedback.

3.2.7. Filter

After all sound sources have been mixed, the composite signal is sent to the filter section. The raw composite signal coming from the mixer section is typically too bright to be useful, especially when ramp or pulse waveforms are chosen. Most common sounds have a much darker timbre, and this is where the filter section comes in. The Legend comes with a low- and a bandpass filter. The most common filter mode is the lowpass filter, which attenuates frequencies above a variable cutoff frequency (see fig. 3.2.7).

Cutoff

The Cutoff knob sets the cutoff frequency. The labels around the knob indicate the approximate frequency in Hz (without the filter envelope and no key tracking applied). When the knob is turned to the left, the sound will become progressively darker. Turned fully to the right, the sound coming from the mixer will keep its full brightness. A special property of The Legend's filter is that it has a very wide range which exceeds the audible audio range.
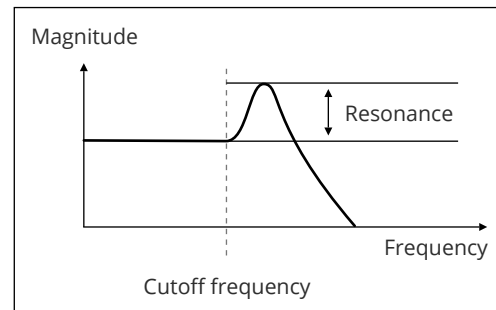
Fig. 3.2.7. Lowpass filter response

Resonance

This knob controls the filter resonance. Resonance in a filter creates a sharp peak around the cutoff frequency, emphasizing those frequencies. When the resonance value is higher than approximately 7.5, self-oscillation occurs. When the filter self-oscillates, it generates a sound very similar to a sine wave, and requires no external input like an oscillator to make a sound.

12/24 dB switch

The filter can be toggled between an attenuation of 12dB and 24dB per octave. This affects how quickly the high frequencies are attenuated above the cutoff frequency, either by 12 dB per octave or 24 dB per octave. The classic vintage analog lowpass filter uses a slope of 24 dB, however 12 dB can be very useful for brighter sounds.

LP/BP switch

The Legend offers two filter modes, a classic lowpass filter and a bandpass filter mode. A bandpass filter attenuates frequencies above and below the cutoff frequency, a useful mode to design sounds such as lead sounds with less bottom end.

Keytrack

Enabling the keytrack switches increases the cutoff frequency according to the key currently played. Higher keys correspond to a higher cutoff frequency. The first switch enables 1/3rd and the second switch 2/3rd of the keytracking. When both switches are enabled, full keytracking is achieved (it means that moving an octave up approximately doubles the cutoff frequency).

3.2.8. Filter Envelope

An envelope controls a sound parameter over time, starting from the instant a key is pressed (see fig. 3.2.8). The filter envelope is designed specifically to modify the filter cutoff frequency over time. Most sounds, whether synthetic or acoustic, start out very bright then become dark quickly. The filter envelope achieves precisely this effect in combination with the lowpass filter.
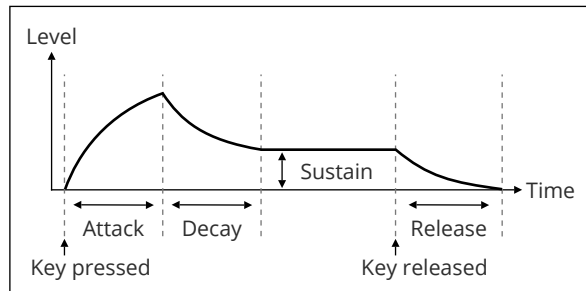

Fig. 3.2.8. The filter envelope

Envamt

Controls the amount of the filter envelope, which is added to the cutoff frequency.

Attack

The Attack knob sets the duration it takes for the envelope to reach its maximum value. Most sounds use a setting near the minimum in order to create a snappy attack.

Decay

After reaching the peak, the decay stage commences. During the decay stage, the envelope falls back to a lower level, the sustain level. The Decay parameter specifies the duration of the decay stage, i.e. how long it takes to fall back to the sustain level.

Sustain

This parameter specifies the sustain level that is reached after the decay stage ends. The sustain stage lasts as long as a key is depressed.

Release

The release stage is triggered whenever a key is released. The release parameter specifies the duration it takes the envelope to hit zero. Note that when the sustain level is set to zero, the release parameter may have no effect if the envelope has previously reached zero already.

Remarks

When triggering new notes, envelopes always continue from their current state. This behavior results in a smooth glide from one note to the next in Mono-Legato mode. In Poly mode, the smooth envelopes allow to play chords successively without clicks or other artifacts, despite the limited polyphony.

A unique feature of the filter envelope in The Legend is that when Decay and Release times are long, the envelope amount starts to build up. Hitting keys in quick succession thus yields a brighter and brighter timbre, which makes the synth sound dynamic and responsive.

3.2.9. Amplitude Envelope

The amplitude envelope works just like the filter envelope, but controls the volume of the sound, rather than its timbre (see fig. 3.2.9).

Attack

The Attack knob sets the duration it takes for the envelope to reach its maximum value. Most sounds use a setting near the minimum in order to create a snappy attack.
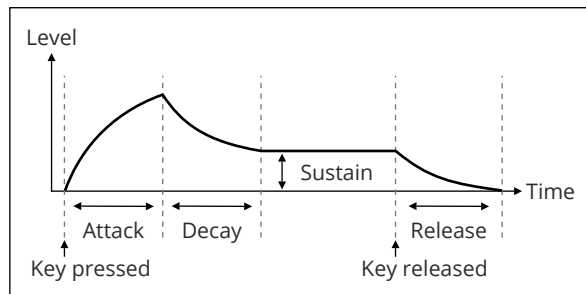
Fig. 3.2.9. The amplitude envelope

Decay

After reaching the peak, the decay stage commences. During the decay stage, the envelope falls back to a lower level, the sustain level. The Decay parameter specifies the duration of the decay stage, i.e. how long it takes to fall back to the sustain level.

Sustain

This parameter specifies the sustain level that is reached after the decay stage ends. The sustain stage lasts as long as a key is depressed.

Release

The release stage is triggered whenever a key is released. The release parameter specifies the duration it takes the envelope to hit zero. Note that when the sustain level is set to zero, the release parameter may have no effect if the envelope has previously reached zero already.

3.3. Back Panel

The back panel of The Legend provides parameters to fine-tune the analog simulation and hosts the parameters of the Delay and Reverb effects.

3.3.1. Global

PB Range

The two Pitch Bend Range controls adjust the maximum amount of semitones the pitch wheel will transpose up or down. Note that the controls operate just like all other knobs in The Legend, i.e. they must be left-click/dragged to change their value.

Note Priority

The meaning of the Note Priority switch depends on whether Unison/Mono mode is selected or the polyphonic Poly mode. In Mono and Unison modes, Last Note Priority means that a new key that is depressed will always take precedence over other keys depressed before. Low Note Priority will instead always play the lowest note. In Poly mode, up to four different notes can sound at the same time.

Last Note Priority will simply activate the most common voice stealing mechanism here, which is to take away voices only when necessary. For example if four keys are depressed, adding a fifth key will remove one of the previous notes playing.

The other mode Low/RR (RR=Round Robin) will instead cycle through the voices one by one, regardless of which keys are being depressed and what notes are currently playing. This mode is useful when Pan Spread is used, because this way it becomes possible to alternate voices between the left and right channels consistently.

The Note Priority switch has an effect on the Glide behavior, too. When in Mono or Unison mode, Lowest mode priority will give precedence to the lowest note, hence gliding from a lower note to a higher note is not possible. Choosing Last Note priority instead allows to glide both up and down, and thus is probably a better choice. This is also true for Poly mode. When choosing Last Note priority in Poly Mode, The Legend will try to glide towards the nearest note if possible, for instance when playing two different chords successively, typically giving the best results. In Round Robin mode, however, the poly glide behavior is less predictable, since the upcoming voice is going to glide starting from whatever note it played previously.

Mono Mode

This mode determines how overlapping notes are treated in Mono and Unison modes. Set to Retrigger, playing a new note will always restart the envelopes from the Attack stage. When set to Legato, a new note will only trigger the envelopes if no note is currently being held. Otherwise, The Legend will smoothly glide towards the new note, at a rate determined by the GLIDE knob.

Model Revision

The Legend offers two revisions to choose from. The difference between the two revisions is mostly in how the oscillator board is modeled, and can be easily noticed on patches using the Square, Wide or Narrow Pulse wave forms. Furthermore, the two revisions model part tolerances for the filter and amplifier.

3.3.2. Modulation

This section allows to fine-tune the amount of modulation.

Pitch Range

The Pitch Range control allows to increase or decrease the effect the modulation wheel has on the pitch. In order to have any effect, this parameter requires the OSC modulation to be enabled on the front panel.

Cutoff Range

The Cutoff Range control allows to increase or decrease the effect the modulation wheel has on the filter's cutoff frequency. In order to have any effect, this parameter requires the FILTER modulation to be enabled on the front panel.

Shape

This knob allows to blend smoothly between a linear and an exponential response of the modulation wheel. The effect is easiest to understand by opening a patch with modulation applied and then moving the modulation wheel all the way up slowly.

3.3.3. Oscillators

This section allows to adjust the oscillator circuit and keyboard models employed in The Legend.

Key Tracking

The Legend is capable of emulating anything from an instrument that is substantially out of tune (common for vintage synthesizers) to one with impeccable tuning, depending on personal preference.

The two parameters Key Tracking and Drift allow to control tuning imperfections in The Legend. Key Tracking determines how the tuning changes over the range of the whole keyboard. Set to mid position (0), key tracking is accurate and all three oscillators will be tuned perfectly across the entire keyboard. Choosing positive or negative values will cause notes to be slightly out of tune relative to each other. The more distance between the notes, the stronger the detune effect.

Note that changing the Key Tracking knob typically requires to adjust the Fine Tune knob on the front panel. When choosing large Key Tracking values like -5 or +5, the tuning across the whole keyboard is off by quite a bit, and thus a patch should be fine-tuned to the desired range, for example the bass range - otherwise The Legend may be out of tune when mixing it with other instruments.

Drift

The Drift parameter controls random pitch changes over time, for each oscillator separately. Set to zero, none of the oscillators will drift. The best way to find a suitable drift value is to enable two oscillators set to the same volume, then sustain a note and listen to how the oscillators beat over time.

Oscillator 3 Lo-Sync

If Oscillator 3 is in "Lo" mode, this switch synchronizes the rate to the host tempo. On the front panel, the oscillator rate can now be specified in musical units via the SEMI knob. Musical units include quarters, eights or sixteenths notes, with either their standard durations, or in triplet (T) or dotted (*) form.

Examples:

• 1/4 specifies the duration of a quarter note.

• 1/8+ sets the modulation rate to a dotted eight note.

• 1/16T sets the modulation rate to a sixteenth triplet.

• 1/1 sets the modulation rate to span one bar.

• 2/1 sets the modulation rate to span two bars.

Oscillator Phase 1,2,3

The Phase knobs allow to specify the initial oscillator phases when pressing a key. The default is free-run, i.e. oscillators keep running freely and will thus have a random phase when a note is played.

For bass and percussive sounds, it is sometimes desirable to have a specific fixed oscillator phase, such that each note always sounds the same. This can be accomplished by setting specific start phases.

3.3.4. Filter

Cutoff Range

This knob adjusts the Cutoff range of the filter. Positive values will increase the maximum possible cutoff frequency, negative values will decrease it.

Resonance Range

This knob adjusts the Resonance range of the filter. Positive values will increase the maximum possible resonance, negative values will decrease it. Increasing the resonance range will cause the filter to self-oscillate earlier as the Resonance knob on the front panel is turned up.

Symmetry

Analog filter circuits exhibit asymmetric effects when driven into saturation, causing even-order harmonics to appear at the filter output.

The Legend faithfully emulates this behavior and allows to adjust it with the Symmetry knob. When set to zero, there is no asymmetric effects and the filter will only generate odd-order harmonics. In general it is recommended to use a non-zero value for authentic analog sound.

3.3.5. Amplifier

Saturation

After a sound has passed through the filter, it runs through the amplifier stage, where the amplitude envelope is applied to the sound. This stage is called voltage-controlled amplifier (VCA) in analog synthesizer and saturates the signal The amount of saturation can be changed by using the Saturation knob. Note that the effect can be subtle and depends on how much gain has been applied previously via the Oscillator volume controls and the Filter Drive knob.

3.3.6. Performance

The Legend features a small performance matrix on the back panel.

The performance matrix allows to link typical MIDI performance controllers like Velocity or Aftertouch to key sound parameters such as Filter Cutoff or Volume.

The MIDI source controller can be chosen using the popup on the left side, the destination is selected on the right. The amount of modulation is controlled by using the knob between both the source and destination. Up to three different performance are available.

Available source parameters are Velocity, Aftertouch, Foot, Expression and Timbre (CC 74).

Destination parameters comprise Filter Cutoff, Modulation Amount, Envelope Amount and Volume.

3.3.7. Multidimensional Polyphonic Expression (MPE)

When in POLY mode, The Legend supports MPE. This means that each note played can be controlled individually with the performance parameters set up in the performance matrix. Typical MPE source controllers are Aftertouch and Timbre (CC 74).

In addition to the performance controllers, The Legend supports polyphonic pitch bend.

3.3.8. Power Supply

The Legend models the effects of the power supply on the sound. The mains frequency can be switched between 50 Hz and 60 Hz.

3.3.9. Delay

Time

Sets the delay time in musical intervals (1 = half note, 1/8= eight note etc). All delay times have two further variations marked "T" and "*". "T" denotes a triplet, whereas "*" extends the delay time by +50%.

Feedback

The feedback parameter adjusts how often the echoes are repeated. The percentage specifies the level change from one echo to the next, so 100% creates an infinite series of echoes, 50% cuts the level of each subsequent echo in half, etc.

Width

The Width parameter blends echoes seamlessly from monophonic to full stereo. The stereo echoes are of the ping-pong type, i.e. the echoes will alternate between the left and right channels.

Dry/Wet

Adjusts the amount of the delay effect, by blending between the dry and processed signals.

3.3.10. Reverb

A reverb effect is used to create the illusion of a sound being played back in a spatial environment such as a living room, hall or cathedral. The reverb effect in Legend is designed to give best results for synthetic sources, which are often more difficult to process than natural sounds.

Time

Allows to adjust the reverb time in seconds.

Color

The reverb in Legend is a two-band design, so bass and treble frequencies can reverberate with different times. The Color parameter adjusts the bass reverb time, relative to the main reverb time. Set to center position, the bass reverb time is equal to the treble reverb time.
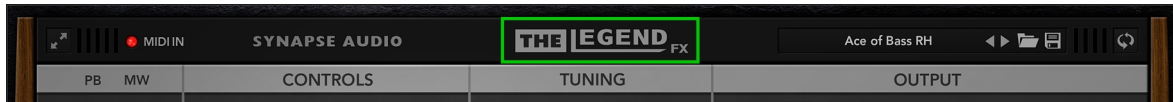
Width

Adjusts the stereo width from mono (0%) to full stereo (100%).

Dry/Wet

Adjusts the amount of reverb, by blending between the dry and processed signals.

4. Effect version

The Legend comes with an effect version named "The Legend FX". This version allows to apply the high-quality filter, amplifier, delay and reverb effects of The Legend to any stereo audio signal.

The effect version has an extra switch in the Amplifier section, which turns on or off the amplifier envelope. If the amplifier envelope is turned off, audio signals can be processed directly.

There is two ways to use the effect version of The Legend, described below.

The easy way is the default way, where the amplifier envelope is turned off. Any stereo audio signal can be treated with the filter, drive, saturation, global feedback and the delay/reverb of The Legend directly in this mode.

The advanced way is to send MIDI notes to The Legend FX, which triggers the filter+amplifier envelopes. This will also make the oscillators and noise generator audible if desired (if not, they can be turned off with the corresponding on/off switches, or their volume can be set to zero). The point of sending MIDI notes to The Legend FX is to apply its filter and amplifier envelopes to other sources, for instance other synthesizer sounds. It is also conceivable to create gated sounds or other special effects in this way.

5. Patch Browser

Since version v1.5, the VST/AU version of The Legend contains an extensive patch browser to search for specific sounds, manage soundbanks, mark favourites, or even create completely new sounds with the Genetics function. The patch browser is opened by the "BROWSER" icon in the patch selection area.
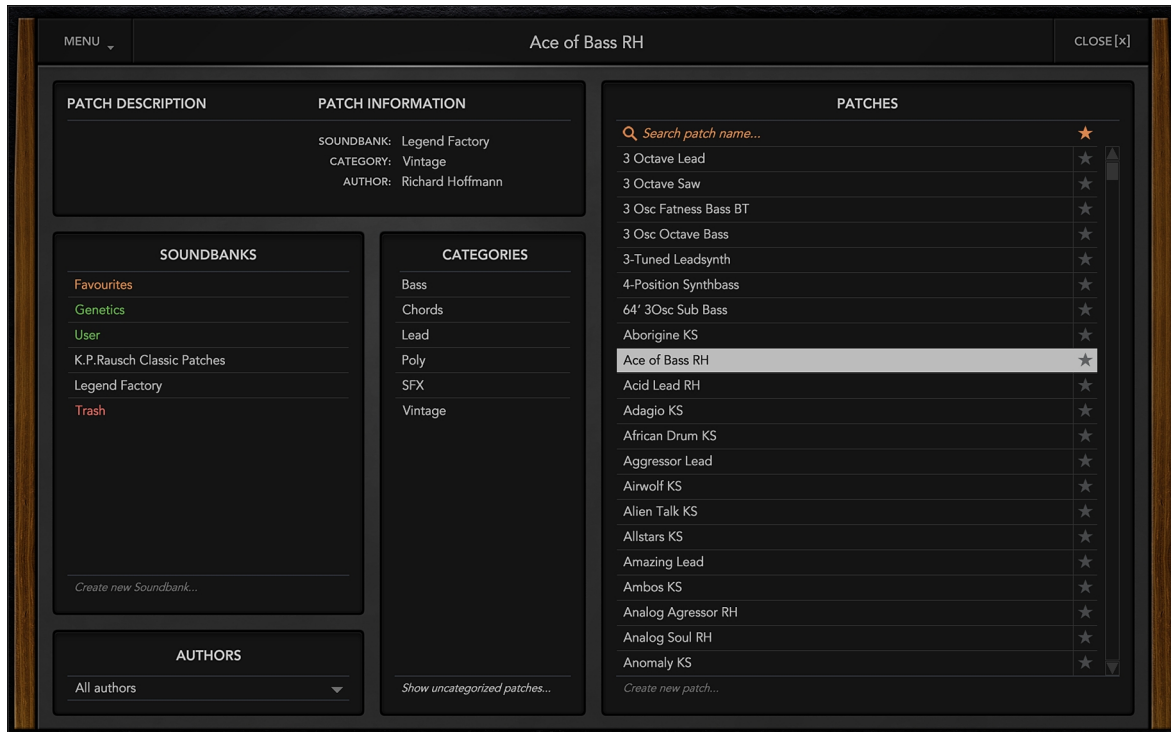
Important: Since the patch browser is typically used to change the currently selected patch, any changes made to the active patch should be saved before using the patch browser.

The functions of the patch browser are explained in more detail below.

Soundbanks

When the browser is opened for the first time, all installed patches from all soundbanks are shown on the right column. By left-clicking on a soundbank, the displayed patches can be limited to the selected soundbank. By right-clicking on a soundbank, that soundbank can be renamed, or its location in the file system can be revealed.

In addition to the factory soundbanks, there are special banks highlighted in color:

- **Favourites:** This displays all patches that have been marked as favourites.

- **User:** Own patches can be stored in this soundbank.

- **Trash:** Displays patches that have been moved to the trash can. These patches can then be permanently deleted by right-clicking and selecting "Clear Trash".

With the function "Create new soundbank..." a new soundbank can be created with the desired name.

Authors

This popup menu can be used to limit the patches displayed on the right to a specific author. By default, all authors are displayed.

Categories

The patches shown can be limited to specific categories. Multiple selection is possible by holding the CTRL key.

The "Show uncategorized patches" function displays all patches that have not yet been assigned to a category yet. This is useful for sound designers who are creating a new soundbank.

Patches

The right column shows all patches that match the current selection criteria. Left-clicking on a patch selects and makes it the current patch. Multiple selection is possible by holding either the CTRL or SHIFT keys. Using Drag+Drop, selected patches can be assigned to a specific soundbank or category.

The search box on top can be used to search for specific patch names. Entering a string will immediately show all patches containing this string.

With the "Create new patch..." function at the bottom, a new Init Patch can be created in the current soundbank.

Menu

The MENU button provides the following functions:

- **Genetics:** Opens the Genetics tab, which can be used to create new sounds (see below).

- **Import Patch/Folder:** These functions can be used to add a single The Legend patch or a directory of patches to the sound banks. This can be useful to quickly integrate patches from external hard drives or USB sticks.

- **Import ZIP:** With this function a zipped soundbank can be imported directly. The soundbank will be named like the ZIP.

- **Reload Soundbanks:** Reloads all patches, in case patch files have been added or deleted manually via the file system.

Note: For the folder and ZIP import, if there are wavetables found besides the patches, these are also automatically copied into the wavetables. In this way, third-party soundbanks can be installed quickly and conveniently.

Genetics

With the Genetics function, new sounds can be created from 2-3 already existing patches. In doing so, properties from these patches are randomly thrown together.

After selecting at least two patches in the patch window on the right (hold down the "CTRL" key for multiple selection), a new patch can be created using the "Generate" function. If the selected patches fit well together, usually only a few clicks on "Generate" are necessary to get a usable sound.

Important: When pre-listening, the listening volume should be relatively low, since the generated patches are random and can therefore sometimes become very loud.

The "Auto" function is similar to the "Generate" function, with the difference that here two new patches are randomly selected from the current directory with each click.

Successful sounds can be quickly saved with SAVE. These sounds are then stored in their own soundbank "Genetics" and are date and time stamped.

The Genetics function can weight the selected patches differently. This is controlled by the "Amount" knob. The larger the value, the more patches 2 and 3 are factored into the final sound. At the minimum value of 0%, patches 2 and 3 are not considered at all, i.e. the first patch remains as is.

Keyboard shortcuts

To speed up the workflow, the browser supports the following keyboard shortcuts:

- **Arrow keys** select the next/previous patch.

- **F2** renames the currently selected patch.

- With **ESC** or **RETURN** the browser can be closed.

Adding custom authors and categories

The browser allows to add new authors and categories if desired. To accomplish this, a simple text file named "config.ini" must be put into the respective Soundbanks directory. For instance, to add new categories to the factory library, the config.ini file must be placed in the Soundbanks/Legend Factory folder.

The text file contains the categories and/or authors to be added. An example is listed below:

; Example config.ini file

AddCategories = Bells, Guitars, Mallet Sounds

AuthorCode = JD

AuthorName = John Doe

This example file adds three new categories to the patch browser, "Bells", "Guitars" and "Mallet Sounds". Furthermore, an author named "John Doe" with initials "JD" is added. Note that the new author will only show up if at least one patch by the author is in the Soundbanks folder, for instance "My Guitar JD".

6. Troubleshooting

If The Legend does not work as expected, check the following points. If your problem is not listed here, do not hesitate to contact us at service@synapse-audio.com, we are happy to assist you.

6.1. Patches do not recall

The most likely reason is that you have the demo version installed, which does not recall the parameter states. If you have purchased the full version, make sure to uninstall the demo version then install the full version, and be sure to provide your proper serial number and activate The Legend with no errors.

6.2. Parameters change unexpectedly

Check your MIDI setup. While The Legend uses a controller map designed to not react on controllers such as program change or volume (which may be sent by some hosts), it is possible that your gear sends other controller messages that The Legend will respond to. The default controller assignments are given in Appendix B: MIDI Implementation Chart.

6.3. MIDI messages are not received

Check the MIDI IN indicator, located on the top left of The Legend's user interface. If this indicator never lights up, The Legend does not receive any MIDI messages. Check the MIDI setup of your host sequencer, as well as the setup of your hardware.

6.4. The sound is distorted

Lower the master volume, and watch out for the clipping indicator in your host sequencer. If this does not help, check your audio driver settings and the CPU load.

6.5. The CPU usage is very high

Check if your system meets the minimum system requirements.

7. Legal Information

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Appendix A. Sound Design Reference

Ab.	Author name	Email or website
DG	David Goodwin	-
EX	Daniel Thiel (eXode)	https://soundcloud.com/exodesound
IW	Ingo Weidner	ingo_weidner@web.de
KS	Kevin Schroeder	https://www.facebook.com/DejaVuSound
MH	Mark Holt	https://soundcloud.com/markholt
RH	Richard Hoffmann	http://www.synapse-audio.com
ST	Solidtrax	http://www.solidtrax.nl
TK	Marc Hoppe (Teksonik)	teksonik@outlook.com
XS	Xenos Soundworks	http://xenossoundworks.com/

The K.P.Rausch Patch folder is based on the "Classics Patch Charts Series" by Klaus P. Rausch, available on http://www.backintimerecords.de/bitr045.htm, and used with permission from the author. Many thanks go to Ingo Weidner for porting over the patch sheets to The Legend.

Appendix B. MIDI Implementation Chart

Parameter	CC#	Parameter	CC#
ModWheel	1	Osc 2 Range	27
Output Volume	17	Osc 2 Semi	42
Unison Spread	18	Osc 2 Fine	43
Unison Detune	19	Osc 3 Active	28
Effects Active	12	Osc 3 KTRK	31
Glide	5	Osc 3 Wave	29
Modulation Mix	16	Osc 3 Range	30
Modulation OSC	14	Osc 3 Semi	44
Modulation FLT	15	Osc 3 Fine	45
Tuning Coarse	20	Mixer Osc 1	46
Tuning Fine	21	Mixer Osc 2	47
Osc 1 Active	22	Mixer Osc 3	48
Osc 1 Wave	23	Mixer Noise	49
Osc 1 Range	24	Mixer Noise Type	50
Osc 1 Semi	40	Mixer Drive	51
Osc 1 Fine	41	Mixer Feedback	52
Osc 2 Active	25	Filter Type	70
Osc 2 Wave	26	Filter LP/BP	84

MIDI Implementation Chart cdn.

Parameter	CC#
Filter Cutoff	74
Filter Resonance	71
Filter Env Amount	77
Filter Env Attack	80
Filter Env Decay	81
Filter Env Sustain	82
Filter Env Release	83
Filter KTRK 1	78
Filter KTRK 2	79
Amplifier Env Attack	73
Amplifier Env Decay	75
Amplifier Env Sustain	76
Amplifier Env Release	72
Opts Mod Pitch Range	111
Opts Mod Shape	112
Opts Mod Cutoff Range	113
Opts Osc Keytracking	114
Opts Osc Drift	115

Parameter	CC#
Opts Flt Cutoff Range	116
Opts Flt Reso Range	117
Opts Flt Symmetry	118
Opts Amt Saturation	119
Delay Time	86
Delay Feedback	88
Delay Width	90
Delay Dry/Wet	92
Reverb Time	85
Reverb Color	87
Reverb Width	89
Reverb Dry/Wet	91
Velocity Target	53
Velocity Amount	54
Aftertouch Target	55
Aftertouch Amount	56
VCA On/Constant *(FX version only)*	99