Getting Started

The Cherry Audio Elka-X is based upon a rare and somewhat mythical 80s flagship, Italian polysynth made by the Elka corporation in the early eighties. Its voice architecture is somewhat typical of analog polysynths of the era, featuring eight voices comprised of two oscillators and a noise generator into a filter, and independent ADSR envelope generators for the filter and voltage-controlled amplifiers. However, it had a number of unique features including highly stable and unique sounding digitally controlled oscillators, as well as a state-variable filter capable of lowpass, highpass, and two bandpass curves. Along with a powerful onboard analog chorus effect, this gave it a unique and powerful tonality. It was used extensively by Stevie Wonder, Asia's Geoff Downes, and French synthesizer legend, Jean-Michel Jarre, who used it as the primary sound source for his famed "laser harp," which looks even less cool to play than a keytar.

It also had the (then-rare) ability to simultaneously play two patches in split or layer mode, which we've retained with improved polyphony - a total of 16 voices (keyboard mode doesn't affect totally polyphony).

Finally, the original also featured a really nifty four-track sequencer. Cherry Audio Elka-X includes the step sequencer, which has been both expanded and simplified.

Unfortunately, the Elka's primary market was home organs, and though they dabbled in synthesizers, they never gained a strong foothold in the professional market. And like a lot of other analog and analog/digital hybrid synths of the early 80s era, it was lost in the shuffle by the Yamaha's DX line's crushing market dominance.

These days, the originally instrument is highly sought after, and original examples can trade in the vicinity of $15,000! Lucky for you, Cherry Audio has reproduced the original with supreme authenticity and we'll let you have our stunning virtual reproduction for an even ten grand. Of course we're kidding... at just $39, we think Elka-X is represents a fantastic value - we've put in a great deal of effort to make it sound just like the original, and added thoughtful updates to make it a little friendlier. We've also expanded the effects choices with a stereo delay and a studio-quality reverb in addition to the realistically modeled chorus.

Technical Assistance

Cherry Audio's unique online store and automatic updating should make operation a smooth experience, but if you run into any issues or have questions, you can discuss issues online at the Cherry Audio forums at:

https://forums.cherryaudio.com/viewforum.php?f=37

... or you can communicate directly with one of our chipper tech support staff at:

https://cherryaudio.kayako.com/

Elka-X Voice Architecture
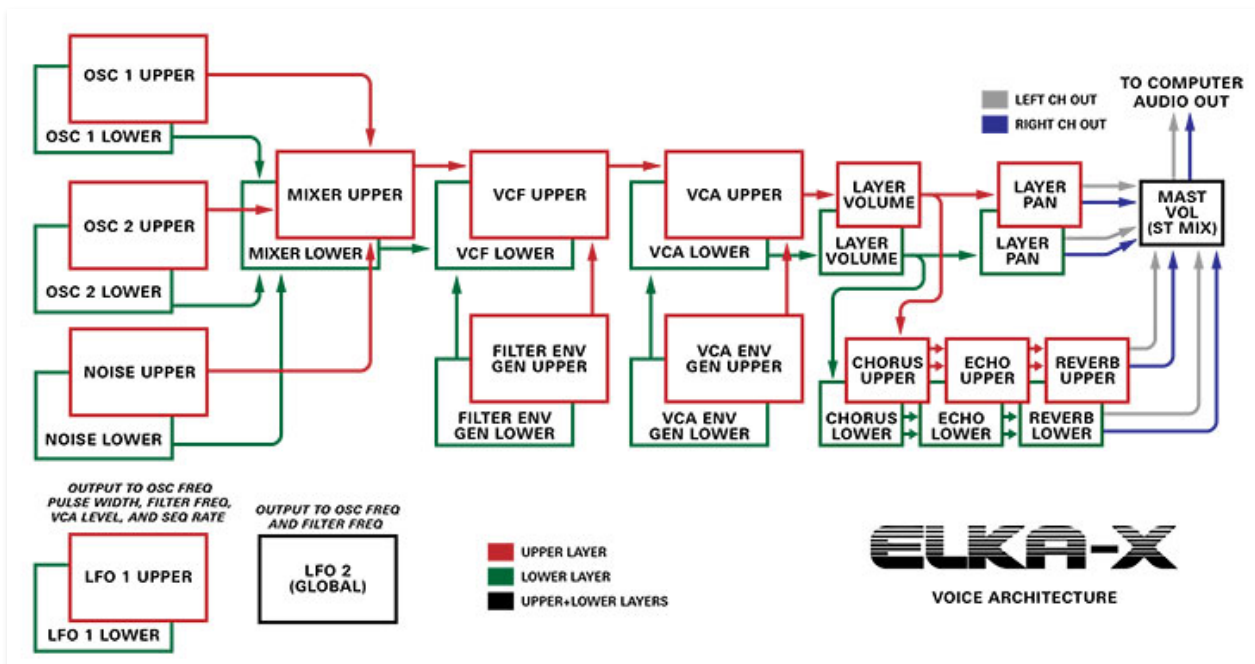
Elka-X's overall layout should be familiar to anyone experienced with classic mono and poly synths. The signal path begins in the center of the instrument with two near-identical digitally-controlled oscillators, each with selectable range and triangle, saw, square, and variable-pulse waveforms. Each oscillator also allows pulse-wave cross modulation in addition to ring modulation. Oscillator 1 includes an oscillator sync button, and oscillator 2 includes a *Detune* fine-tune control. Each oscillator includes a volume control.

A white/pink noise generator with a volume control. The oscillators and noise generator are summed, and routed to a multimode filter voltage-controlled filter (VCF), which affects the sound timbre. From the VCF, the signal travels to the voltage-controlled amplifier (VCA) for amplitude shaping via the VCA ADSR envelope generator. The VCF also has its own ADSR envelope generator for dynamic filter tone shaping.

The signal is tapped following the *Layer Volume* control (**before** to the Layer Pan control) and sent in parallel to the Chorus, Echo, and Reverb effects and mixed with the dry final output signal. All effects are stereo.

Elka-X can operate as a standard "single layer" polysynth with up to 16 voices (in *Single* keyboard mode), or in *Double* (stacked) or *Split* (separate sounds assigned above and below a user-specified split point) mode with completely independent sounds and signal paths for the upper (red in the

diagram) and lower layers (green in the diagram). Onboard effects are also fully independent for the the upper and lower layers.

Elka-X also includes two independent modulation sections, a fixed LFO 1 section, and performance-oriented LFO 2 section, intended for use with pitch and mod wheel controllers.

Though not shown in the diagram, Elka-X also includes a sequencer with four monophonic sequences per patch, assignable to the upper or lower layer. Each sequence can be up to 128 steps in length.

Top Toolbar, Sound Presets, and Focus Control

The purple strip at the top of Elka-X contains all of the preset loading and saving navigation, "under-the-hood" settings, zoom and focus control, and more.

New- Opens a new blank patch preset. If an unsaved patch is currently open or you've modified an existing saved patch, a dialog asks if you'd like to save the patch in its current state. This greatly reduces the possibility of losing an edited unsaved patch.
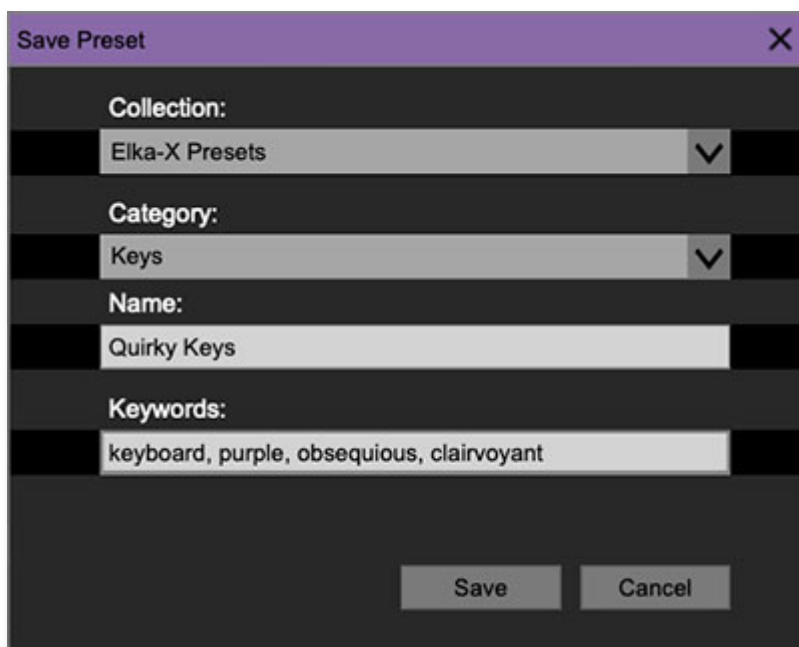
Save- Use this to save patches. There are a couple of levels of hierarchy:

- **Collection**- This is the top level of organization, and contains entire "sets" of presets. The *Elka-X Presets* are the main included collection. We also include a *User Presets Collection* for storing user presets, but you're free to create your own collections. To create a new collection, click in the *Collection* text field (where it says *User Presets* above) and type a name. User-created sounds can be freely saved to any collection; we like to "keep 'em sepa-rated" for organizational purposes.

- **Categories**- Within each *Collection* are a number of sound categories. As with collections, you're free to create as many categories as you like. To create a category, click in the *Category* text field of the *Save* dialog window and type a new category name.

- **Patch**- A patch is an individual sound. To save a patch, simply type the name in the *Name* field and click *Save*.

- **Keywords**- You can add descriptive words such as "huge," "clavinet," "noisy," etc., to patches to make them appear when terms are typed in the *Search* field. Use commas to separate multiple keywords entries.
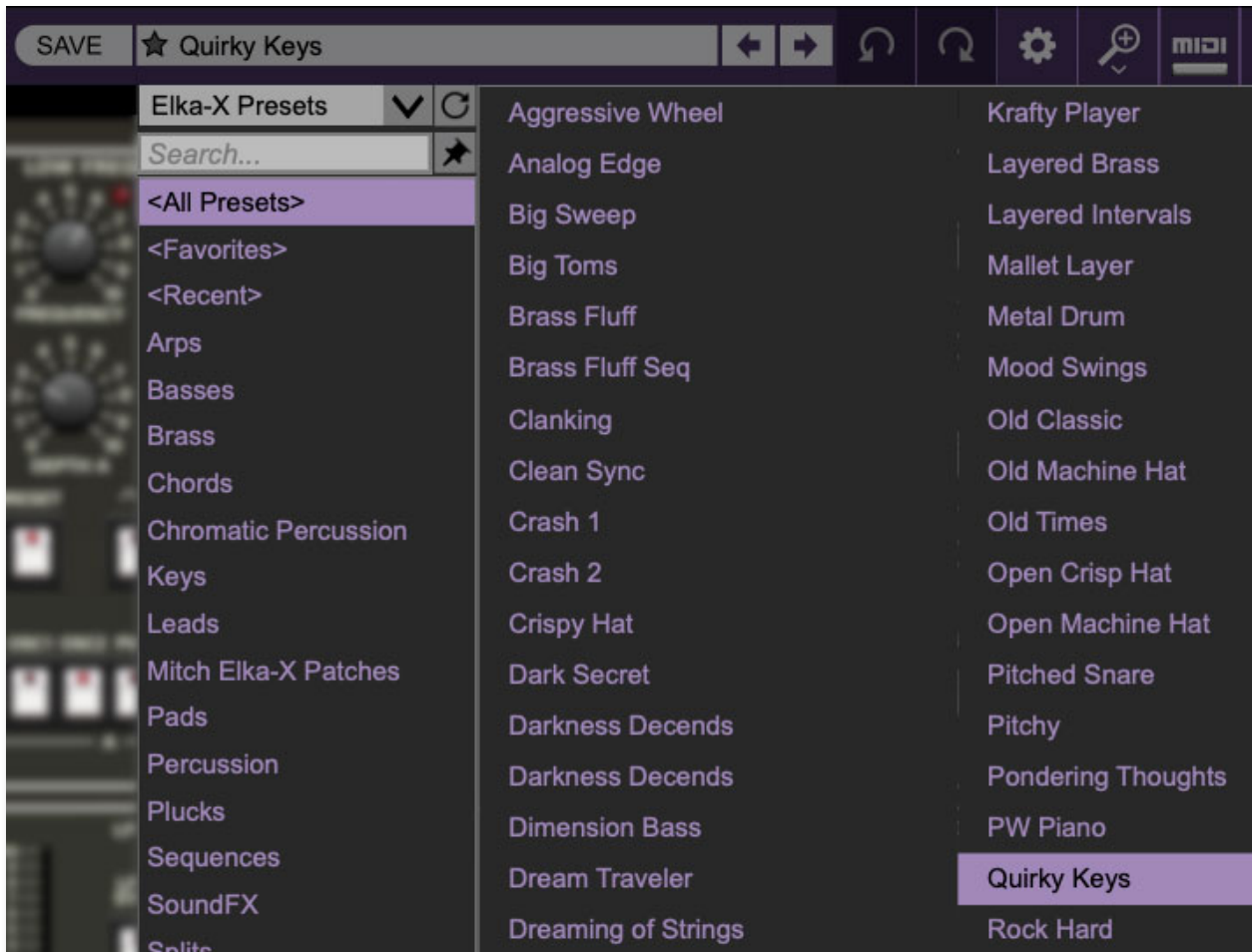
Browsing Patches- Patches can be browsed by clicking the *<Select Preset>* field. To select a preset collection, click in the area that says *<All Collections>* or on the downward-facing arrow next to it.

Clicking on the left-side categories narrows down which patches are displayed.

- **<All Presets>** will show presets from all collections and categories.
- **<Recent>** displays recently used presets.

- **Refresh**- This is the circular arrow button to the right of the downward arrow; clicking this checks the Cherry Audio server for new or updated presets.


Pin- Clicking the pushpin icon locks the patch selection list open, allowing fast and easy browsing and auditioning of patches. Click the icon again to disable pin mode. When in pin mode, the up and down arrow keys can be used to select patches.

Preset- *Step Back/Forward Arrows*- These step to the previous or next preset. macOS [⌘+left/right arrow key] or Windows [CTRL+left/right arrow key] will navigate through presets back and forth in the currently selected collection/category.

Undo/Redo- These circular arrows will undo or redo the last action. It remembers many steps, so if you really loused something up, keep on (un)clickin'...

Settings- This is where user preferences for user interface, audio interfaces, user account, and more are configured. See the **Settings** section for full information.
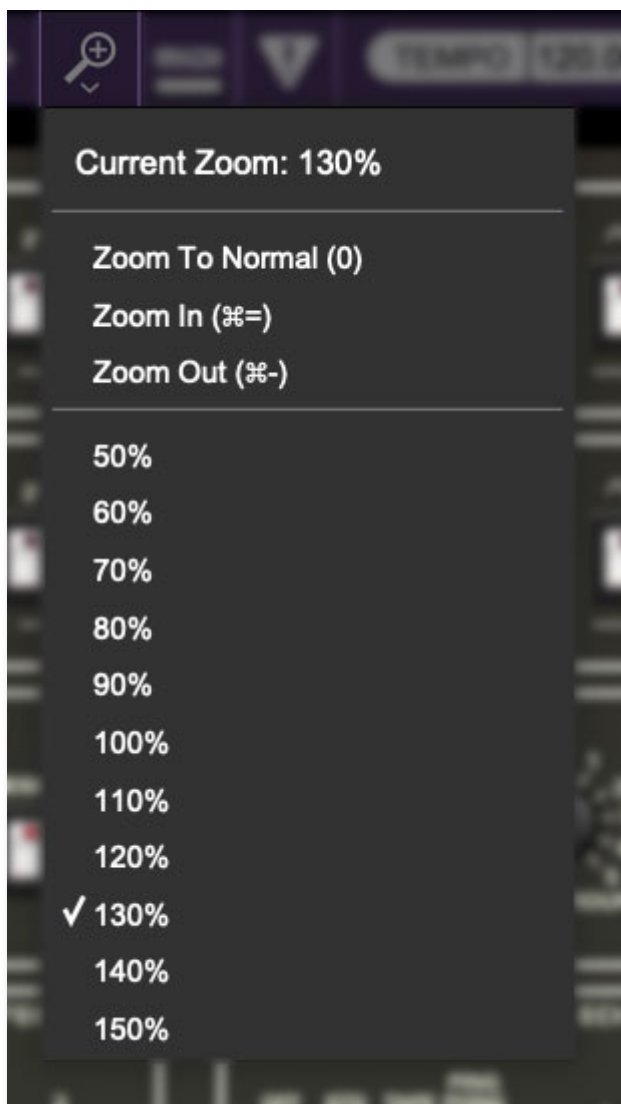
Importing Presets with drag-and-drop

Presets can be imported singly or en masse (as a single compressed ZIP file) simply by dragging and dropping from the desktop anywhere on the user interface.

If a single .*preset file is dragged and dropped, the sound is immediately loaded and the standard Save Preset dialog appears; this lets you save the sound to the instrument's preset browser. Note that you don't have to save the sound to preset browser; if you just want to hear and play the sound, click the Cancel button in the Save Preset dialog - the sound will still be loaded.

Compressed zip files containing multiple sounds can also be drag and dropped onto the UI. This works the same as with single sounds, but instead of the Save Preset dialog, you'll see the Import Preset Collection dialog. The presets will be added as a new collection and available in the categories for which they were tagged.

Zoom Magnifying Glass- Click to resize the Elka-X interface window. Selecting *100%* returns the user interface to native size.

MIDI tab- Opens the MIDI controllers tab for configuring internal and hardware MIDI controls. See the **MIDI Controllers Setup and MIDI Tab** section for full information.

! (MIDI Panic)- Click to send an all-notes-off message in case of rare, "make this #$!%ing thing shut up?!?" stuck-note incidents.

Tempo (Standalone Version Only)- Displays Elka-X's current internal tempo setting. Elka-X's internal tempo affects the LFO 1 and 2, the sequencer, and echo section rates when their corresponding *Sync* buttons are enabled. The tempo setting can be changed by moving the mouse up and down anywhere in the tempo section, or by double-clicking the number and entering the desired BPM value.

The tempo display only appears in the standalone version of Elka-X. VST, AU, and AAX plug-in versions receive tempo data from their host DAW app.


QWERTY Musical Typing Keyboard- Opens an onscreen keyboard allowing a standard QWERTY computer keyboard to be used for playing music notes. For more information, see the **QWERTY Musical Typing Keyboard (MTK)** section.

? (Help)- Clicking this launches your web browser and opens the help document you're already reading. Confusing circular logic at its finest.

Cherry Audio Elka-X Synthesizer logo - Clicking this displays "about" information, and shows the version number and current registered user ID.

Focus Button
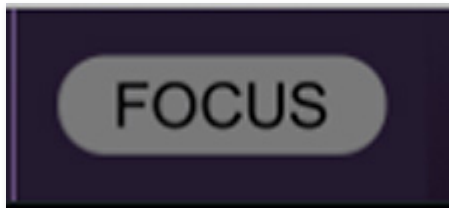
Since the original instrument is over three feet wide and your display likely isn't, it was necessary to ensmallinate lots of things (sure, that's a word). If you're using a tiny laptop, this could make things hard to see. With this in mind, the *Focus* button conveniently blows up Elka-X's user interface to roughly twice its normal size within the current window size. Unlike the *Zoom* "magnifying glass" function, *Focus* doesn't affect the current window size. By default, the patch panel section fills the current window, but the view can be scrolled vertically and horizontally with a mouse wheel, track pad, or Apple Mighty Mouse finger-scrolling. Or if you're the last person on earth still using a single-button mouse, scroll bars will appear at the window edges when in *Focus* mode. (Drop us a line from your AOL account, umkay?)

Using *Focus* mode couldn't be easier - just click the *Focus* button the top menu bar. To return to standard view, click *Reset*. **There's also a superfast key shortcut** - on Mac, hold the ⌘ [COMMAND] key and click the mouse; in Windows, hold the [OPTION] key and click the mouse. Focus can be reset with the same key shortcuts.

Preset List Right-Click Functions
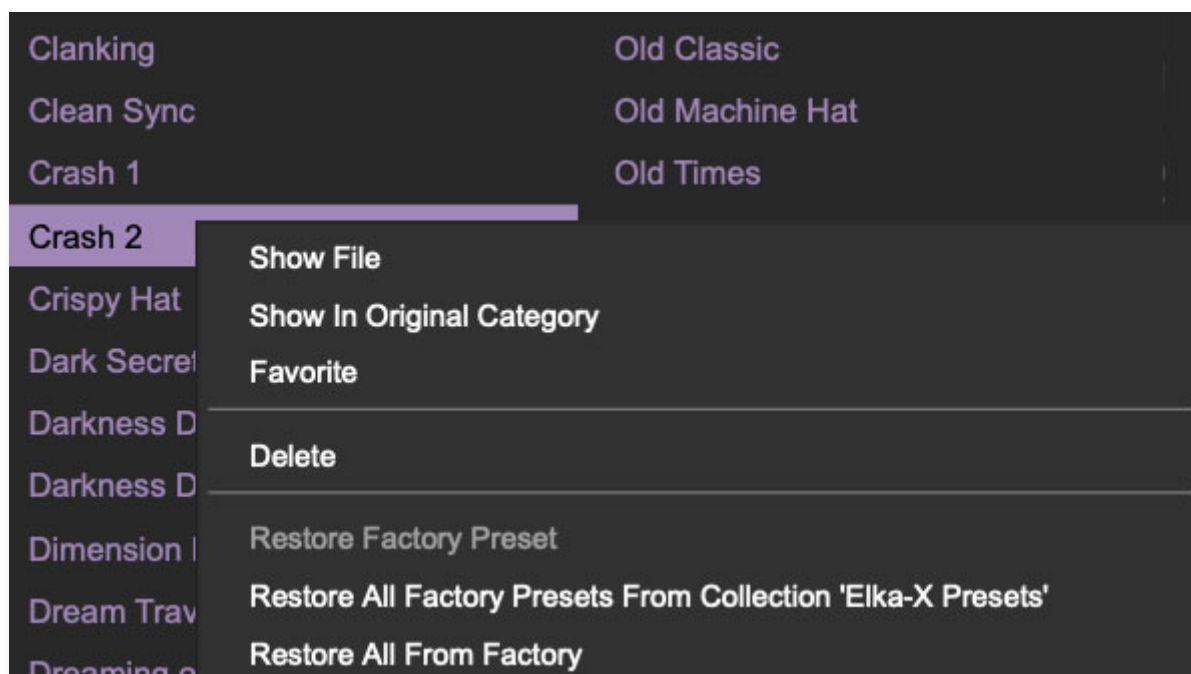
Show File - This displays the selected preset in the Mac or Windows folder containing it. This is useful for backing up or sending a preset file to another user.

Show In Original Category - Selects the preset within its category, i.e. the category will highlight in the left preset menu. The *Show In Original Category* command only displays if the preset was selected within the *<All Presets>*, *<Favorites>*, or *<Recent>* categories.

Favorites - Favorited presets will show in when the *<Favorites>* category is selected. A star will display next to the preset name. Right-click on the preset and reselect *Favorite* to un-favorite it.

Delete - Deletes the selected preset.

Restore Factory Preset - If one of the factory (i.e. not user) patches is edited and saved, selecting this command restores the patch to its unaltered "factory" setting. This menu will be grayed-out for user bank patches.

Restore All Factory Presets From 'Elka-X Presets' - If any patches from the "factory" Elka-X bank are edited and saved, selecting this command restores *all* of them to their unaltered factory setting.

Restore All From Factory - If any patches from the factory banks are edited and saved, selecting this command restores *all* of them to their unaltered factory setting. At the time of writing, the Elka-X bank mentioned above is the only factory bank, so this function and the *Restore All Factory Presets From 'Elka-X Presets'* above have the same effect.

Show File- This displays the selected preset in the Mac or Windows folder containing it. This is useful for backing up or sending a preset file to another user.

Oscillators

Elka-X includes two digitally-controlled oscillators (DCOs. DCOs were famously employed in the Roland Juno-6/60/106 synths, and sometimes get a bad rap because people assume they're not "analog" and are therefore inferior. The "digital" part refers to the tuning and scaling circuitry, and certainly improved tuning stability. In reality, DCOs are still "analog" and sound great, and we've gone to great effort to recreate the sound of the original oscillators.

DCO-type oscillators are **very** stable - Elka-X's pitch does not "drift" or waver in any way. This is why we didn't include the "drift" control you may have seen in other Cherry Audio instruments.

Since the oscillators are almost identical, we'll go over the controls one time and make note of differences along the way.

Octave- Sets the coarse pitch range for each oscillator in standard organ footage settings of 16', 8', 4', 2' and 1'. Only one octave footage can be active at any time; selecting a footage disables the others.

Transpose- Allows fine-tuning of pitch or building intervals into multi-oscillator patches. It's also useful for fattening up multi-oscillator patches by detuning a small amount. Its range is a one octave.

Tune - These adjust the tuning of the oscillators by about 1/4 of a step up or down. These are particularly useful for individual detuning when in keyboard *Double* (i.e. stacked) mode.

Waveform- Selects the oscillator waveform. Each oscillator includes triangle, sawtooth, square, variable pulse.

Also in this section are OSC2 PWM and Ring Modulation; these aren't waveforms, but affect the raw waves as follows:

- **Osc2/1 PWM cross modulation**- Selecting these routes the signal of the other oscillator to control oscillator pulse width the variable pulse width wave is selected. Because this modulation is occurring very quickly (i.e. audio rate), the effect is similar to ring modulation. Experiment with the *Octave*, *Transpose*, and *Detune* controls to hear all the tonal possibilities.

- **Ring Modulation**- When two audio sources are inputted, the output contains only the sum and difference frequencies of the two signals, while removing common frequencies. The audio result is useful for creating sounds with inharmonic frequency content, which is useful for synthesizing bell and metallic sounds. Again, we recommend experimenting with the *Octave*, *Transpose*, and *Detune* controls.

Pulse Width- Sets the width or "duty-cycle" of pulse waves, from a perfect square to a very narrow pulse. It has no effect on other waveforms.

Volume- Sets pre-filter oscillator level.

Noise Generator

The Noise Generator section is a simple affair that can generate white or pink noise.

Mode buttons:

- **Off**- Disables noise.

- **White**- A random signal in which all frequencies across the frequency spectrum are represented equally.

- **Pink**- A random signal in which each octave is represented equally across the frequency spectrum . Pink noise tends to sound duller and bassier than white noise.

Volume- Sets noise level prior to the filter.

Multimode Filter and Filter Envelope

The original instrument made use of CEM3320 filter chips. These were very common in the heyday of polyphonic analog and hybrid synths, and were also used in the Prophet-5, Oberheim OB-Xa and OB-8, and many others. Unlike most other instruments that used the CEM chips in a basic 24 dB/oct lowpass configuration, the Elka used a multimode implementation that allowed selection of 24 dB/oct lowpass, 6 or 12 dB/oct bandpass, or 12 dB/oct highpass. This enabled many tonal colors that couldn't be achieved with typical analog polysynths.

About Filter Types

• A lowpass filter allows frequencies *below* the cutoff frequency setting to pass through, but blocks frequencies *above* the cutoff frequency.

• A highpass filter is the opposite of lowpass mode: high-frequency content remains, but low frequencies are removed as the cutoff frequency increases.

• Bandpass filters combine both lowpass and highpass modes, leaving sound only "in the middle" with amplitude falling off symmetrically on either side of the cutoff frequency.

Controls

Frequency- Sets the frequency where frequency attenuation begins, i.e. which frequencies are allowed to pass, dependent on the current *Filter Modes* setting.

Envelope- The *Envelope* control applies modulation from the Filter Envelope to the cutoff frequency. This allows familiar auto filter sweeps. When raising the *Envelope* control, you'll generally want to lower the *Cutoff* control, as these controls sum.

Resonance- Resonance emphasizes sound energy at and around the current cutoff frequency by adding feedback from the filter's output back to its input. At lower settings, this can be used to create mild resonances such as those heard in acoustic instruments. At extreme settings, it can be used as a sine wave generator, but be careful as high resonance settings can result in loud, screamy, dog-spooking (and speaker blowing) occurrences.

Keyboard- This causes the cutoff frequency to increase as ascending notes are played on a keyboard. The idea behind this is that the *Keyboard* control applies a rising CV to the cutoff frequency in order to maintain the brightness of notes as higher pitches are played (because actual note frequencies rise as higher pitches are played).

Filter Modes- These select the overall filter behavior, as described in the About Filter Types section above, as follows:

- **LP1 (Lowpass)**- Allows frequencies below the cutoff frequency to pass, but blocks frequencies above the cutoff frequency with a 24 dB/oct slope.

- **LP2 (Lowpass)**- Allows frequencies below the cutoff frequency to pass, but blocks frequencies above the cutoff frequency with a 12 dB/oct slope. This has a slightly "sharper" sound than a 24 db/oct slope.

- **BP1 (Bandpass)**- Allows a band of frequencies in the vicinity of the cutoff frequency to pass, with a 6 dB/oct slope.

- **BP2 (Bandpass)**- Allows a band of frequencies in the vicinity of the cutoff frequency to pass, with a 12 dB/oct slope. This creates a narrower passband than BP1's 6 dB/oct slope, and a correspondingly sharper and thinner sound.

- **HP (Highpass)**- Allows frequencies above the cutoff frequency to pass, but blocks frequencies below the cutoff frequency with a 12 dB/oct slope. Because they dramatically remove low frequencies, the highpass setting is useful for nasally tones with exaggerated high frequencies.
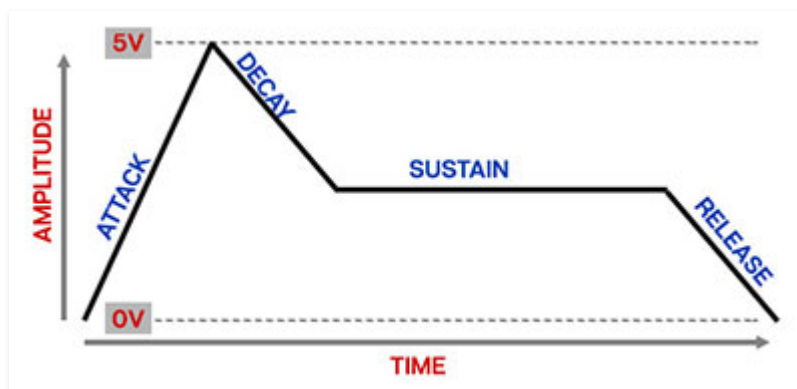
Envelope Invert- Though it's in the same group as the Filter Mode buttons, *Envelope Invert* is not a filter mode per se. When toggled, it reverses the polarity of the Filter Envelope's effect on the cutoff frequency (via the *Envelope* knob). Because the Filter Envelope works subtractively when the *Envelope Invert* button is engaged, it's most audible when the *Frequency* knob is at higher settings.

Filter Envelope

The Filter Envelope is a dedicated envelope generator for control of cutoff frequency (via the Envelope knob).

How An ADSR Envelope Generator Works

When Elka-X sees a gate voltage from a note, the envelope generator outputs a dynamically changing voltage, according to the settings of its four stages. The attack stage defines how long it takes for the output voltage to

rise from zero to full scale. Once the attack stage reaches its max amount, it moves to the decay phase, which defines how long it takes to fall from full scale to the setting of the sustain phase. Unlike the attack, decay, and release phases, which define times, sustain simply sets the held voltage level following the attack and decay phases - this equates to the envelope output level while holding down a key. Finally, the release slider defines the the length of time it takes for the voltage to fall back to zero when the gate input voltage is removed, i.e. when the key is released.

Controls

Attack- Defines the length of time for cutoff frequency voltage to rise from zero to full scale when a key is played.

Decay- Defines the length of time for cutoff frequency voltage to fall from the attack stage peak to sustain stage setting.

Sustain- Sets the cutoff frequency voltage level following attack and decay phases while a note is held.

Release- Defines the length of time for cutoff frequency voltage to fall from sustain level to zero when a key is released.

Velocity- Defines how much the envelope affects the filter cutoff frequency via keyboard velocity. When set to zero, keyboard velocity has no effect on cutoff frequency; all the way up results in maximum control range.
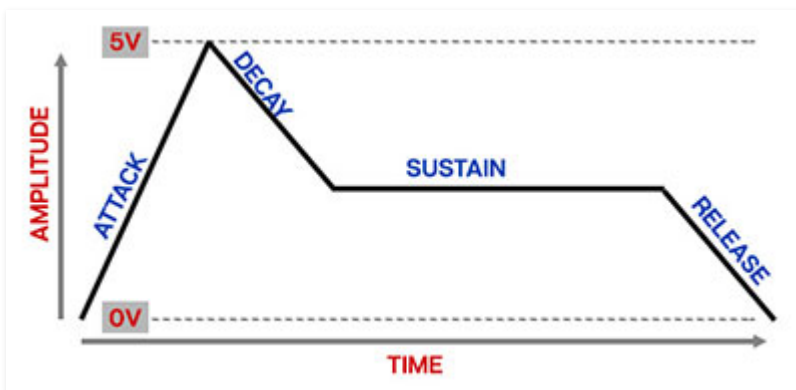
Amplifier

The Amplifier Envelope section consists of a standard attack, decay, sustain, release-style (ADSR) envelope generator controlling voltage-controlled amplifers (VCA's) for each voice.

A simple analogy would be to think of the voltage controlled amplifier (VCA) as a faucet that gets adjusted by an incoming control voltage from an envelope generator, low-frequency oscillator, or other modulation source that controls the volume of each individual note.

Elka X's under-the-hood VCA section doesn't have any dedicated controls per se, but it has a dedicated envelope generator for shaping amplitude curves.

How An ADSR Envelope Generator Works

When Elka-X sees a gate voltage from a note, the envelope generator outputs a dynamically changing voltage, according to the settings of its four stages. The attack stage defines how long it takes for the output voltage to rise from zero to full scale. Once the attack stage reaches its max amount, it moves to the decay phase, which defines how long it takes to fall from full scale to the setting of the sustain phase. Unlike the attack, decay, and release phases, which define times, sustain simply sets the held voltage level

following the attack and decay phases - this equates to the envelope output level while holding down a key. Finally, the release slider defines the the length of time it takes for the voltage to fall back to zero when the gate input voltage is removed, i.e. when the key is released.

Controls

Attack- Defines the length of time for amplitude to rise from zero to full scale when a key is played.

Decay- Defines the length of time for amplitude to fall from the attack stage peak to sustain stage setting.

Sustain- Sets the amplitude level following attack and decay phases while a note is held.

Release- Defines the length of time for amplitude to fall from sustain level to zero when a key is released.

Velocity- Defines how much the envelope affects note amplitude via keyboard velocity. When set to zero, keyboard velocity has no effect on cutoff frequency; all the way up results in maximum control range.

Keyboard

This section sets keyboard assignment and triggering behavior. This is divided into two sections - the upper frame controls are global, that is, they affect both the upper and lower layers. The bottom section parameters can be set independently for the upper and lower layers.

Global Keyboard Parameters

These affect both layers, i.e. everything you hear.

Keyboard Mode- Globally sets keyboard voice triggering.

- **Single**- This is the standard keyboard mode. The upper voice plays across the entire keyboard range, and the lower voice is disabled.

- **Double**- Upper and lower voices are stacked and play across the entire keyboard range.

- **Split**- The keyboard is split with the lower voice playing in the keyboard range *below* the split point, and the upper voice playing in the keyboard range *above* the split point. To set the split point, double-click the *Split* button. The LED note display flashes; hit the key of the desired split point. The LED note display stops flashing and the split point is set. Alternatively, click the LED note display to set the split point using the popup note selection menu.

Max Voices- Sets the total maximum number of notes that can sound simultaneously, from 2 to 16. Note that voices are allocated using a last-note priority system. *Max Voices* affects the entire instrument globally, i.e. both layers.

Upper/Lower Voice Assign Parameters

These parameters are independent for the upper and lower layers - this is why they're in a separate "frame."

- **Poly** - This is the standard polyphonic mode, with voices allocated using last-note priority. If the number of notes played exceeds the current maximum setting, the oldest note is stolen and the most recently played note sounds.

- **Mono Single**- One note can be played a time, with a single voice sounding.

- **Mono Unison and Unison Detune** - One note sounds at a time. Multiple voices will stack according to the current *Max Voices* setting. Use the *Mono Unison* mode in conjunction with the *Uni Detune* knob - this is especially important, because Elka-X's DCO-style oscillators don't drift, so setting the *Uni Detune* knob at zero will sound kinda ugly... but dialing up *Uni Detune* will immediately sound awesome.

Chord Memory- Allows chords to be memorized and played with a single key. To memorize a chord, click the *Chord Memory* button. The button flashes to indicate that it's in learn mode. Play a chord up to 16 notes (hey, we don't know how many fingers you have); when the last note is released, the button LED turns solid and the chord is memorized. The *Max Voices* number display will show how many notes are in the memorized chord. To disable *Chord Memory* mode, click the button again.

Note that *Chord Memory* isn't just for "chords" per se; it can be used for octaves, fifths, or any desired combination of notes.

Multi Trigger (Mono modes only)- Defines triggering behavior for the VCF Envelope and VCA Envelope generators. When *Multi Trigger* is enabled in either of the mono modes, the envelopes retrigger from the beginning every time a new key is pressed. When *Multi Trigger* is disabled, the envelopes will only retrigger if no other notes are currently held; this is known as "single trigger" or legato mode. Single trigger mode is useful for emulating the

sounds of some acoustic instruments - for example, the sound of plucking a note on a guitar, then sliding on the string to different notes without plucking again. *Multi Trigger* mode generally feels more responsive to play and is useful for more aggressive passages - in guitar lingo, something like picking every single note.

Oscillator 2 Sync- This causes Oscillator 1 to force reset the start of Oscillator 2's waveform to the beginning of its cycle, resulting in the classic Cars "*Let's Go*" tearing harmonics sound (or No Doubt's "*Just A Girl*," for children of the 90s) when the oscillator 2's pitch is swept. The mod routing for swept oscillator sync is a little unusual - check out the end of the **Glide/Portamento** section for details.

Low Frequency Oscillators

Elka-X includes two independent modulation sections - the Low Frequency Oscillator section (i.e. LFO 1) at top left, and the LFO 2 section beneath it. On the original instrument, the Low Frequency Oscillator section (which we'll refer to as LFO 1) was used for static, "always on" modulation, whereas LFO 2 was nominally off and applied dynamically via a joystick. On Elka-X, we've added an *Initial Amount* parameter to LFO 2 - this lets you use either LFO as a constant mod source.

Low Frequency Oscillator (LFO 1)

Frequency- The *Frequency* knob sets LFO speed , from 0.02 to 20 Hz (with *Sync* switch off). The LED beside the *Rate* knob flashes at the current modulation rate, and visually indicates the curve of the current mod waveform.

Sync- When the *Sync* switch is enabled, LFO 1 speed will lock to host tempo when using Elka-X within DAW software, or to the current tempo in the top

menu bar when using the standalone version. The Frequency knob will snap from 8 beats up to 1/64th note triplets.

Delay- Turning this up gradually delays the onset of LFO depth. The delay time can be up to 30,000 ms (that's 30 seconds for those of you unfamiliar with the metric system). Note that the Low Frequency Oscillator section consists of a single mod oscillator, so mod delay is global for all notes played, and resets when all notes are released.

When the *Mod Wheel* switch is engaged, the *Delay* knob grays out and is disabled (because delaying the onset of LFO mod when turning up the mod wheel would be super confusing).

Depth A / Depth B- Elka-X has a nifty and unique "split" mod feature. The *Depth A* knob sets the amount of mod sent to Oscillator 1 and Oscillator 2 pitches, and Oscillator 1 and Oscillator 2 pulse-width modulation, and the *Depth B* knob sets the amount of mod sent to filter cutoff frequency, amplitude modulation, and the sequencer play rate.

Note that the *Depth A* and *Depth B* knobs only affect the *amount* of mod; LFO 1 rate is globally controlled by the *Frequency* knob.

Reset- When enabled, the LFO resets to the beginning of its cycle when a key is played. This functions monophonically - **LFO reset only occurs if no other keys are currently held**. It's particularly useful for playing synced rhythmic parts in conjunction with the *Sync* button (as well as the saw and square mod waveforms).

Waveform- Sets the LFO waveform. The waveforms include triangle, sawtooth, ramp, bipolar square, unipolar square, and random .

Regarding the square wave, the original instrument's square was bipolar only. This isn't the greatest if you're trying to set up an alternating note trill. because as mod depth is increased, the low note gets lower and the high note gets higher, making it difficult to set up musical intervals. The unipolar square is much easier to use for pitch modulation, because the bottom note stays constant as mod depth is increased. (The dashed lines in the panel icons indicate the waveform's zero-volt point, in case you ever wondered that meant on your Juno whatever.)

The original also did not have a random (aka, sample-and-hold) wave - we added it for more functionality. Try it as a mod source for *Seq Rate* - it's pretty wacky!

Routing- Sets the LFO 1 modulation destination(s). *A* group mod destination amounts are set via the *Depth A* knob; *B* group mod destination amounts are

set via the *Depth B* knob. Multiple destinations may be toggled in any combination. Unlike the original, we've added a *Seq Rate* destination in group *B*, which can create wild modulated sequencer effects.

LFO 2/Bender and Mod Wheel Destination

In the original instrument, this section contained a four-way joystick for pitch bend, altering the cutoff frequency, or applying triangle-wave LFO mod to pitch (i.e. vibrato) or the filter cutoff (i.e. wah-wah). Obviously we aren't able to make joystick that pops our of your computer display (we're working on it), so instead, we made the LFO 2 section respond to MIDI/USB controller mod wheel data. We also added an *Initial Amount slider*, which allows the second LFO to stay "on" without using a mod wheel, joystick, or duct tape.

Note that LFO 2 generates a triangle wave only, and is completely independent of the Low Frequency Oscillator section (aka, LFO 1).

Sync- When the *Sync* switch is enabled, LFO 2 speed will lock to host tempo when using Elka-X within DAW software, or to the current tempo in the top menu bar when using the standalone version. The *Initial Frequency* slider will snap from 8 beats up to 1/64th note triplets.

Initial Frequency- The *Initial Frequency* slider sets the nominal LFO speed , from 0.5 to 30 Hz (with *Sync* switch off).

Frequency Accel- This allows the LFO 2 mod rate to speed up when the mod wheel is increased. The higher the setting, the more the LFO rate will increase from the *Initial Frequency* slider setting.

The front panel label of the original instrument calls this *Delta Freq.*, but we took the liberty of changing it to something a little more descriptive, as we didn't want anyone confusing this control with a faucet (or a cool vintage Korg synth that we should really make a virtual version of...).

To Osc-

- **LFO2**- Sets the max LFO2 pitch mod depth equally applied to both oscillators via the mod wheel.

- **Bend**- Sets the max pitch bend depth equally applied to both oscillators via the pitch bend wheel.

To Filter-

- **LFO2**- Sets the max LFO2 modulation applied to cutoff frequency via the mod wheel.

- **Bend**- Sets the max cutoff frequency mod applied via the pitch bend wheel (i.e. opens and closes the cutoff frequency with the pitch bend wheel).

Upper / Both / Lower mod destination switch- Selects pitch bender and LFO 2 modulation routing to the upper, lower, or both layers.

Glide/Portamento

The original Elka instrument featured a unique implementation of note glide. "Glide" and "portamento" are often used interchangeably, but here "portamento" refers to the standard gradual pitch changes from note to note, whereas "glide" is what is more commonly referred to as a pitch envelope for each note played.

Osc 1 / Osc 2 destination buttons- These simultaneously enable or disable glide and portamento for oscillator 1 and oscillator 2.

Glide- Enables the glide function, more commonly referred to as a pitch envelope. To be clear, "glide" isn't affected by prior notes; it simply applies a rising or falling pitch envelope to each note as it's played. (see *Glide Amount* below).

Portamento- Enables the portamento function; this is a standard glide effect where notes glide from one pitch to the next instead of discretely changing pitch, much like sliding one's finger up and down a guitar string.

Speed- This sets both the Glide and Portamento functions with higher settings corresponding to longer times.

Glide Amount- Sets the range for the glide "pitch envelope" function described above. Turning the knob left starts the pitch up to 32 semitones beneath the target pitch, turning the knob right starts the pitch up to 31 semitones above the target pitch.

Glide and Oscillator Sync

You might have noticed that Oscillator 1 includes an *Oscillator 2 Sync* button. Oscillator sync is most commonly used for the famous Cars "Let's Go" sync sweep sounds - on most synths, the filter envelope generator is used to sweep the pitch of the second oscillator. But like the original instrument, Elka-X has no way to route the envelope generators to oscillator pitch... or

does it? The *Glide* function can be used to sweep Oscillator 2's pitch for proper sync sweeps:

Enable the *Oscillator 2 Sync* button, reduce Oscillator 1's *Octave* to a low footage and its volume to zero, set Oscillator 2's *Octave* to a higher footage, then enable *Glide* and set the *Glide Amount* knob to a non-zero value.

Arpeggio

An arpeggiator is basically a step sequencer that plays each note of a chord individually in an ascending or descending pattern across one or more octaves.

Pattern- Defines the order in which the notes of the chord are played. The modes are as follows:

- **Off**- Disables the arpeggiator

- **Up**- Plays the notes in order from lowest to highest.

- **Down**- Plays the notes in order from highest to lowest.

- **Up/Down**- Plays notes from lowest to highest then back to lowest again.

- **Random**- Plays held notes in random order.

- **Hold**- This isn't a pattern per se, but when engaged, arpeggios continue to run without having to continuously hold down keys. This allows you to play a series of chords without the arpeggiator stopping as keys are released. Be aware that it will not stop until you disengage the button again. Mapping this to a sustain pedal or button on a MIDI controller can be useful for conveniently toggling arpeggio playback on and off.

Frequency- Sets the pattern speed playback speed. The LED flashes to indicate the current speed.

Sync- Engaging the *Sync* button locks arpeggio timing to master tempo. When engaged, the *Frequency* knob snaps to note values ranging from 1/64th note triplet to 8 beats. *Sync* mode locks to the tempo in the top toolbar when using the Elka-X standalone version or the current project tempo when the plug-in version is used in a DAW.

Range- Selects how many octaves the pattern will play before repeating.

Effects

Elka-X includes three studio-quality stereo effects. It's very helpful to understand their routing, which is a little different than other instruments.

Parallel Effects Routing

In most virtual synths (and most other Cherry Audio instruments), the dry output of the synth feeds each the first effect, the first effect feeds the second, and so on, just like plugging in guitar stomp boxes. This is referred to as a serial configuration.

Conversely, Elka-X's effects are configured in a parallel arrangement. The dry signal is tapped following the *Layer Volume* control (**before** the *Layer Pan* control) and split equally to the Chorus, Echo, and Reverb effects. The wet-only signal from each of the effects is then mixed in *after* the *Layer Pan* knob. This parallel routing is very similar to how you'd use time-domain effects in a mixer with a channel aux send and effects on aux buses.

The reason we configured Elka-X this way was to maintain the *Layer Pan* pan position setting without ruining the stereo field of the effects.

To clarify, Elka-X's output signals are inherently mono, but all three effects are stereo. Let's say a layer was hard-panned to one side of the stereo image; you wouldn't want a big, beautiful stereo reverb to hard pan *along with the dry signal*, otherwise the big stereo reverb would collapse into a small, single-channel reverb in the left signal. In this way, the parallel effects arrangement allows the dry signal to be panned as desired, but the effects signals maintain their wide stereo image.

Independent Layer Effects

Here's another glorious Elka-X feature: **the Upper and Lower layer each have their own individual effects**. In other words, effects settings are completely independent for both layers. Pretty cool, huh?

Chorus Effects
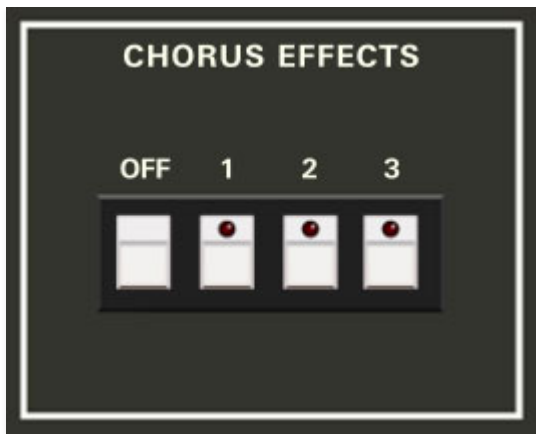
Off/ 1 / 2/ 3 buttons- These enable the chorus effect and set the modes, as follows:

- **Off**- Chorus is disabled.

- **Chorus 1**- A single modulated chorus effect. This is the most subtle of the three.

- **Chorus 2**- A dual chorus effect with differing delay times for more pronounced effect.

- **Chorus 3**- A dual chorus effect with differing delay times and speed for the most pronounced effect.

Spread- Alters the left and right channel delay times creating a stereoizing effect. Greater amounts of spread increase the delay time differential and thus the stereo separation.

Depth- Sets the effect depth, i.e. the amount of LFO delay time mod.

Echo Effects

Off / Standard / Tape / Ping Pong- Enables the echo effect and sets the mode as follows:

- **Off**- Echo is disabled.

- **Standard**- Straightforward digital delay effect.

- **Tape**- A vintage tape echo effect with limited frequency response, and wow and flutter for a natural thickening effect

- **Ping Pong**- Digital delay effect with each repeat alternating between stereo channels.

Time- Sets the delay time from 1-2000 ms. The LED blinks to indicate the current time setting.

Sync- Engaging the *Sync* button locks the delays time to master tempo. When engaged, the *Time* knob snaps to note values ranging from 1/64th note triplet to 8 beats. *Sync* mode locks to the tempo in the top toolbar when using the standalone version of Elka-X, or the current project tempo when the plug-in version is used in a DAW.

Feedback- Routes the output to the input for additional repeats. Be careful at high settings as this can result in runaway feedback madness. (Map this knob to a hardware MIDI knob or slider for semi-controller runaway feedback madness.)

EQ- Attenuates high frequencies as the knob is rotated counterclockwise from center position, and attenuates low frequencies as the knob is rotated clockwise from center position. Not only does this create more natural sounding decays, it also reduces the "stacking" effect that occurs with high feedback levels. *EQ* affects the wet echo signal only.

Spread- This subtracts delay time from the left channel and adds time to the right channel, creating a wide stereo effect, as well as preventing echoes from "piling up" in the center of the image. Note that the subtracted and added delay effectively offsets the overall delay time setting with each repeat, so long delays combined with high feedback settings can become noticeably off time. This can be circumvented by reducing the *Spread* control.

Effect Level- Sets the volume of the wet effect signal.

Reverb Effects

Off / **Plate** / **Room** / **Hall** / **Galactic**- Enables the reverb effect and allows selection of *Plate*, *Room*, *Hall*, or *Galactic* algorithms. You may recognize the *Galactic* algorithm from Cherry Audio's *Dreamsynth* instrument, or our *Galactic* VST/AU plug. It's a super-spacious, enormous reverb that's awesome for huge effects.

Decay- Sets the overall length of reverb; actual times vary dependent on the reverb type.

EQ- Attenuates high frequencies as the knob is rotated counterclockwise from center position, and attenuates low frequencies as the knob is rotated clockwise from center position. Attenuating high frequencies results in a more natural sounding reverb. *EQ* affects the wet reverb signal only.

Effect Level- Sets the volume of the wet effect signal.

Panel Control and Lower and Upper Layers

This innocuous little section is super important. As discussed in the **Keyboard** section, Elka-X can operate in three modes: *Single,* where one sound plays across the entire keyboard range, *Double*, where two separate sounds (layers) are stacked across the entire keyboard range, or *Split*, where two individual sounds are played above and below a user-specified split point (say that five times fast).

With this in mind, the Panel Control section allows selection of which control parameters are currently displayed when in *Double* or *Split* mode. These two sounds are referred to as the lower or upper layers.

Lower/Upper- Selects whether the onscreen controls show current settings for the lower or upper layer. Note that the LEDs for all pushbuttons turn green when showing lower layer settings, and red when showing upper layer settings, and that the *Lower* and *Upper* buttons correspondingly have green and red LEDs.

Utility- This handy popup menu allows upper and lower layer sounds to be copied from the upper layer to the lower layer or vice-versa, in case you'd like to create similar sounds for both layers. It also allows both sounds to be swapped to the opposite layers.

The "Read This Carefully" Section

A couple of details that will make this lower and upper business easier to understand, complete with bold text, so you know we mean business. (Don't push us, or we'll mash the CAPS key too and sound like one of those unhinged grammatically impaired weirdos online.)

- **Switching between *Lower* and *Upper* parameter display has no effect whatsoever on sound**, it just alternates which layer's knob and button settings are currently displayed.

- **Panel Control *Upper* and *Lower* selection only works in *Double* and *Split* Keyboard Modes.** When in *Single* mode, *Upper* is automatically selected and the *Lower* button won't do anything.

- ***Single* Keyboard Mode always uses the upper layer only.**

- **Lower and Upper layer sounds always save as one single sound patch.**

In case you didn't spend hours studying the **tediously created Elka-X Voice Architecture diagram** at the beginning of this manual, here's the Cliffs notes version, vis-à-vis lower and upper layers parameters:

Almost all of Elka-X's parameters are duplicated and independently settable for the lower and upper layers. This includes Low Frequency Oscillator 1, the bottom frame of the Tuning/Keyboard section (the part with the *Poly/Mono* mode controls), Oscillator 1 and 2, Multimode Filter, Filter and Amplifier Envelopes, Arpeggio, the Chorus, Echo, and Reverb effects, and the *Layer Volume* and *Layer Pan* controls in the Volume section.

Low Frequency Oscillator 2 (the one with the sliders), the top section of Keyboard, the sequencer, and the Limiter and Master Volume controls are global, that is, they affect both the lower and upper layers.

Master

This is where output volumes, layer panning, and overall tuning are set.

Layer Solo- Solos the layer currently selected for editing in the adjacent Panel Control section. This is really useful if you're editing a sound on a layer and don't want to hear the other layer. The *Layer Solo* button only works in *Double* and *Split* modes in the Tuning/Keyboard section. I'm pretty sure there's a good "Han Layer Solo" and "Princess Layer-a" joke in there somewhere...

Layer Volume- Sets volume for the currently active layer, as selected with the adjacent Panel Control *Lower* and *Upper* buttons. Remember that the chorus, echo, and reverb effect inputs operate like mixer aux sends, and are "tapped" following the *Layer Volume* control, so dry signal and effect levels will both be affected.

Layer Pan- Sets left/right panning for the currently active layer, as selected with the adjacent Panel Control *Lower* and *Upper* buttons. Note that the *Layer Pan* knob only affects dry signals; the chorus, echo, and reverb effects signal panning aren't affected.

In case you're wondering why the effects are configured like this- Elka-X's output signals are inherently mono, but all three effects are stereo. Let's say a layer was hard-panned to one side of the stereo image; you wouldn't want a big, beautiful stereo reverb to hard pan *along with the dry signal*, otherwise the big stereo reverb would collapse into a small, single-channel reverb. This logic applies to all three effects. (Mono-izing and hard-panning the effects would sound particularly silly in the case of the echo effect *Ping Pong* mode).

Master Tune- Sets the overall tuning for the entire instrument up or down by a half-step. Use this to accommodate your nitwit lead singer who insists
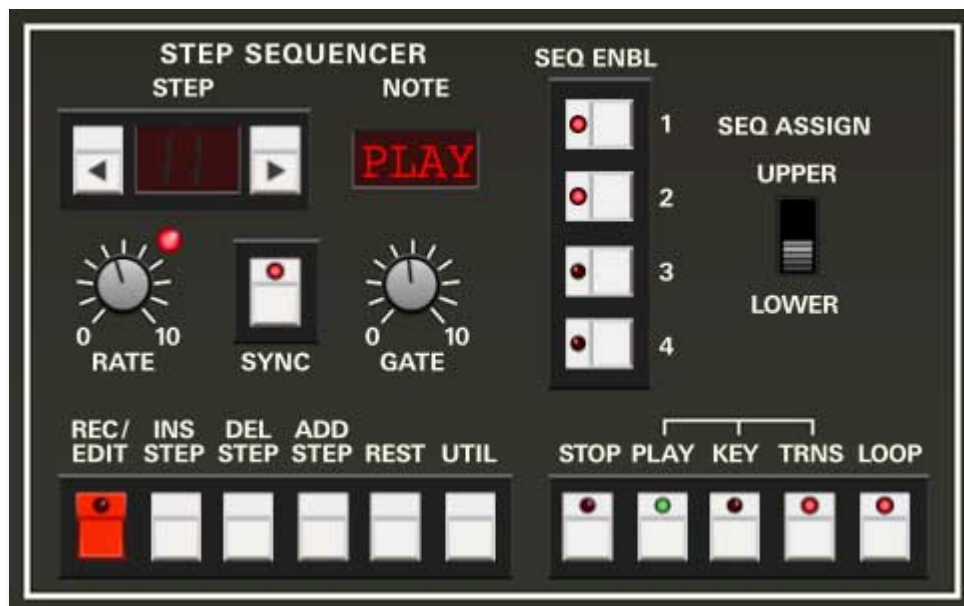
that everyone tunes to A-439 to, "save his voice."

Limiter- The *Limiter* switch applies a transparent limiting effect to help prevent overloading.

Master Volume- Sets the overall volume level for the entire instrument: Lower and Upper layers, and effects.

Output VU meter- Displays overall output level. You know the drill, keep 'er out of the red.

Step Sequencer

The original instrument featured a sequencer that could be used either in real-time by playing passages into it live, or in step-time, by entering notes one-by-one. The real-time mode was honestly pretty wonky, and if you're used to a modern DAW, let's just say you likely wouldn't find it very useful. With that in mind, we made the decision to implement Elka-X's sequencer strictly as a step sequencer. The good news is that Elka X's sequencer is powerful, easy to use, DAW project syncable, and a heck of a lot of fun.

Step Sequencer Structure

The Step Sequencer consists of four individual monophonic sequences, each with a user-definable length of up to 128 steps. Sequence playback can be assigned either to the lower or upper layer.

Each stored Elka-X patch contains its own four sequences which are stored with the patch.

Controls

Main Sequence Controls

Step buttons and display- Each click of these buttons increments the current sequence step down or up respectively. Hold the mouse button down to move quickly through steps. We don't need yer dang carpal tunnel syndrome lawsuit, pal!

Note display- This display indicates the MIDI note of the current step. To change the note, click the *Rec/Edit* button and play a new note on a MIDI/USB controller, or click the display and choose a note from the popup menu.

Seq Enable 1/2/3/4- These serve double-duty; in normal mode these toggle each of the four sequences on on and off. When record mode is enabled, they select which sequence is currently being edited; the active sequencer button will flash.

Seq Assign- Chooses whether the sequencer controls the Upper or Lower layer. Since the Keyboard section *Single* setting always plays the Upper layer, *Sequence Assign* defaults to the Upper position. As a result, the Keyboard mode needs to be set to *Double* or *Split* for the step sequencer to play the *Lower* layer. (Keep in mind that the Panel Control *Utility* button make it easy to move sounds back and forth from the Upper to Lower layer and vice-versa.)

Rate- Sets the sequence playback speed. The LED flashes to indicate the current rate.

Sync- Engaging the *Sync* button locks the sequencer timing to master tempo. When engaged, the *Rate* knob snaps to note values ranging from 1/64th note triplet to 8 beats. *Sync* mode locks to the tempo in the top toolbar when using the Elka-X standalone version or the current project tempo when the plug-in version is used in a DAW.

Gate- Globally sets the length of sequencer notes. A setting of 50% equals half the length of a step. Note that the *Gate* setting directly interacts with

filter and amplifier decay and release settings, so you may need to fine-tune these for desired results.

Sequence Enable 1/2/3/4- These serve double duty:

In playback mode (*Rec/Edit* off), these toggle the four sequences on and off. The four sequences can be enabled individually, or in any simultaneous combination.

When *Rec/Edit* mode is enabled, these select which sequence is currently being recorded to or edited. **Only one *Sequence Enable* button can be active when in *Rec/Edit* mode.** When starting with all sequences blank (i.e., a blank patch), *Sequence Enable* button 1 will be active when the *Rec/Edit* is pressed. At all other times, Elka-X defaults to the most recently recorded to or edited sequence #.

Sequence Assign Upper/Lower- This sets which layer plays sequence data.

A note about Upper/Lower sequence playback:

You may be wondering, "Why can't I play back different sequences on different layers at the same time?" This was actually our original intention, but once we started unpacking the inevitable "what happens if the user does this?" questions, it became clear that the logistics of playing back two or more sequences to different layers - particularly how to handle multiple sequences in Split keyboard mode along with the Key and Transpose modes - was going to be complicated, hard-to-use, and confusing. With that in mind, we decided to stick with the much-easier-to-implement-and-understand sequence-plays-a-single-layer configuration. Surely you have at least one hand to play the darn keyboard with!

Sequence Edit Controls

Besides the *Record/Edit* button itself, the following buttons are only active when record mode is engaged.

Record/Edit- Toggles the record/edit mode on or off for the currently selected sequence.

Insert Step- Adds a sequence step before the currently selected step number and shifts all following steps forward; the new step will contain rest (indicated by a dash in the *Note* display).

Delete Step- Removes the currently selected step number and shifts all existing following steps back.

Add Step- Adds a sequence step following the very last step in the current sequence.

Rest- Makes the current sequence step rest, i.e. no note sounds. The *Note* display will show a dash (–) for the current step. To revert the a rest step back to a standard note, simply enter a note while on the step while in *Record/Edit* mode.

Utility- This opens a popup menu with useful "housekeeping" commands. The first group of commands is repeated for all for sequences:

- **Sequence 1/2/3/4 commands**-

  - **Transpose Up**- Transposes the current sequence up by a semitone or an octave
  - **Transpose Down**- Transposes the current sequence down by a semitone or an octave
  - **Copy To**- Makes a copy of the selected sequence number to the remaining sequence location of your choice.
  - **Move To**- Moves the currently selected sequence number to the remaining sequence location of your choice and erases the sequence from the original location.
  - **Clear Sequence**- Erases the current sequence and initializes the current sequence. Elka-X opens an, "Are You Sure?," dialog box to prevent accidental erasure (I think I saw *Accidental Erasure* open for *Clan of Xymox* in '85 at the Roxy).

- **Clear All Sequences**- Erases all four sequences. Elka-X opens an, "Are You Sure?," dialog box to prevent erasing by accident.

- **Import/Export**- This enables sequences to be copied between Elka-X patches.

- **Copy Sequencer Data to Memory**- This temporarily copies all four sequences to Elka-X's internal memory in order to allow pasting sequence data to a different patch.
- **Paste Sequencer Data**- This pastes all four sequences from the source patch. All four sequences in the destination patch will be overwritten.
- **Paste Only Sequences with Note Data-** This pastes only sequences containing note data. The destination location will be overwritten. If the source sequence location does not contain note data, it will not overwrite the destination sequence location. This lets you combine sequences from patch with sequences in the current patch. The Utility *Move To* and *Transpose Up/Down* commands are particularly useful here.

Here's how to copy sequencer data between two Elka-X patches:

With the source patch selected, click *Utility>Clipboard>Copy Sequencer Data To Memory.* Now select the destination patch (make sure the source patch is saved before leaving it) and click the *Utility* button. Sequencer data can then be pasted in using the *Paste Sequencer Data* or *Paste Only Sequences with Note Data* commands.

Transport Controls
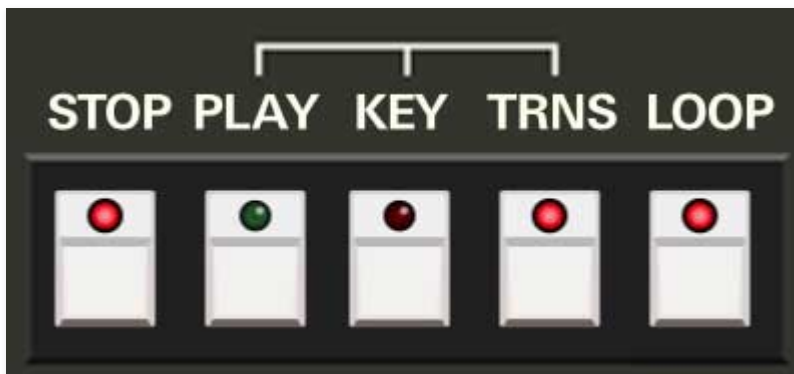
**Stop**- Stops sequencer playback.

Play- Starts sequencer playback.

Key- Enables sequencer playback only when a key on the keyboard is played. When *Key* is pressed, the *Play* button illuminates and the sequencer is "armed," that is, it waits to start playing until a key on the keyboard is played. Sequence playback stops when all keys are released.

Transpose (Trns)- When enabled, all sequences will transpose according to keys played on the keyboard. The "home" transposition (i.e., non-transposed) is always be C1. The range can be "fine-tuned" by using the *Utility* button *Sequence #>Transpose Up/Transpose Down* commands. The semitone transpose commands (*-1/+1*) are especially useful for dialing in sensible sequence note locations when playing split patches with a sequence on one hand and chords/melodies on the other.

Loop- When toggled, sequences automatically loop back to their first step for continuous play. Disabling Loop is useful if you'd like to use the sequencer for "one-shot" sequences - particularly for firing off rapid one-time note passages.

Creating Sequences
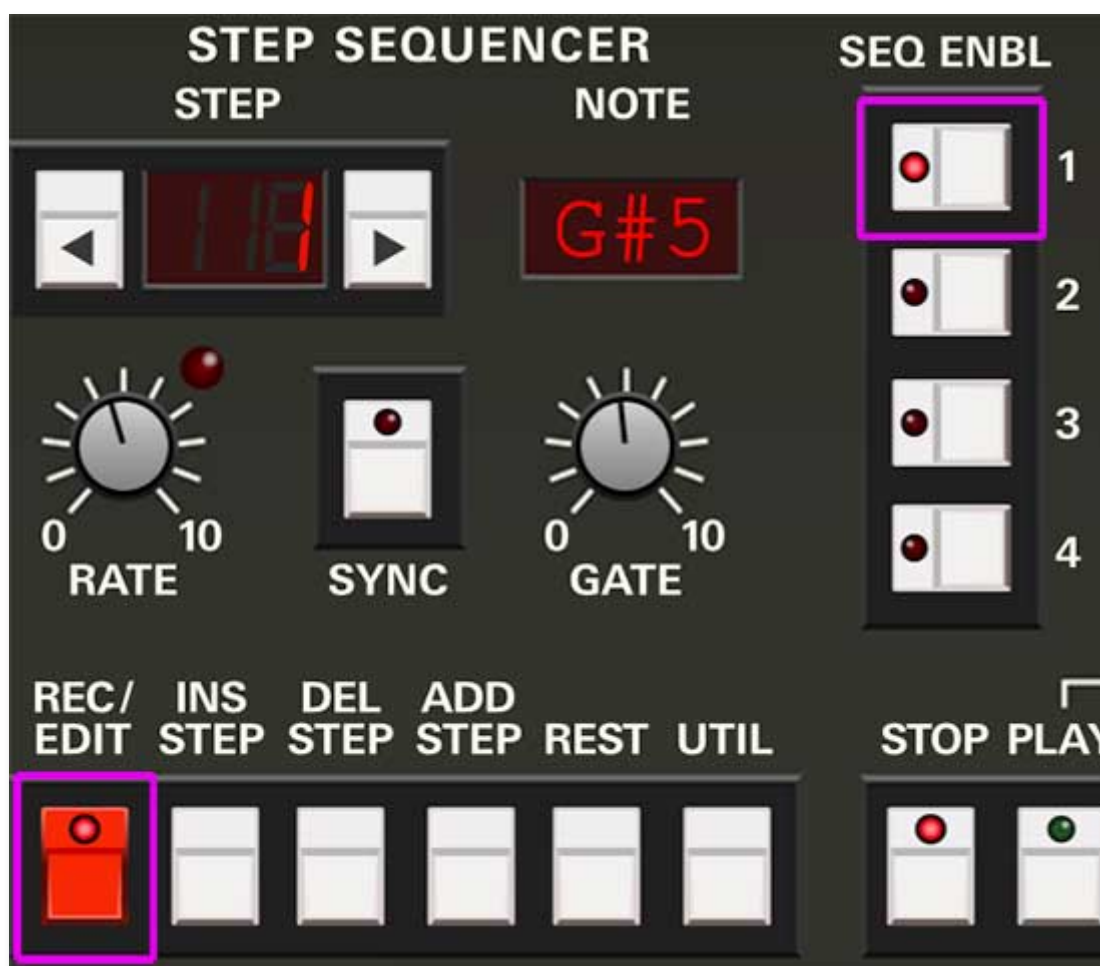
Enable Recording and Select Sequence- Click the *Rec/Edit* button, then select the sequence # *1*, *2*, *3*, or *4* button beneath *Sequence Enable*. The selected sequence button LED will flash.

Entering Notes- When in *Rec/Edit* mode, the easiest way to enter sequence notes is to simply single notes on a MIDI/USB controller, Elka-X's onscreen keyboard, or using the onscreen QWERTY musical typing keyboard (enable the MTK using the keyboard icon in the top purple menu strip). The step # will automatically advance when a note is played. Notes on a step can also be manually selected by clicking in the digital *Note* display and selecting a MIDI note from the popup menu. To add a rest to the current step, click the *Rest* button at the bottom. Rest steps are represented by a dash in the *Note* display.

When *Rec/Edit* is clicked, a new sequence will have single step. A new step will be added with each played note or rest - in this way, you won't have to separately add a step for every new note, and you won't need to define the sequence length prior to creating a sequence. (This is that "easy-to-use/fun" part we were talking about in the intro.)

Editing Sequences

Editing notes couldn't be easier. Enable *Record/Edit* mode, and move to the desired step using the *Step* up/down buttons. Play a new note on a MIDI/USB controller, or click the popup *Note* display and select a different note, or hit the *Rest* button if a rest step is desired.

The sequence that's currently being recorded or edited can be changed by selecting a different *Seq Enable* number - it's not necessary to exit *Rec/Edit* mode.

MIDI Controllers Setup and The MIDI Tab

Assigning internal and external hardware controls adds a whole new dimension of control and musicality to patches, and it's really easy to do. The MIDI Tab is where all controller assignments can be viewed and tweaked. First we'll show how to assign an external hardware controller to an Elka-X control, then we'll go over all parameters in the MIDI Tab.

# Basic External Hardware Control Assignment

This is the quick, "I just want to assign a hardware control right now!," section. We recommend reading this entire section to best take advantage of Elka-X's MIDI control assignments.

In this example, we'll assign a hardware slider control to Multimode Filter *Frequency* knob.
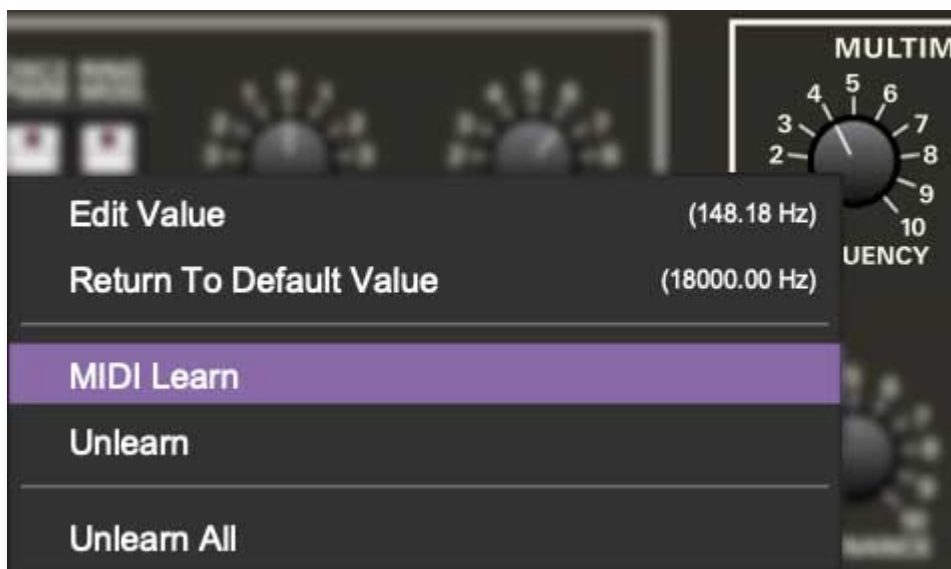
Begin by right-clicking on the *Frequency* knob in the Multimode Filter section and selecting *MIDI Learn.* A transparent purple overlay appears over the knob indicating that it's in learn mode. Now move the desired hardware control device. The purple overlay disappears and the hardware control will move the onscreen knob. If you change your mind (or accidentally select the wrong control), learn mode can be cancelled by right-clicking and selecting *Stop Learning*.

This is the basic procedure for assigning hardware controllers to almost any Elka-X control.
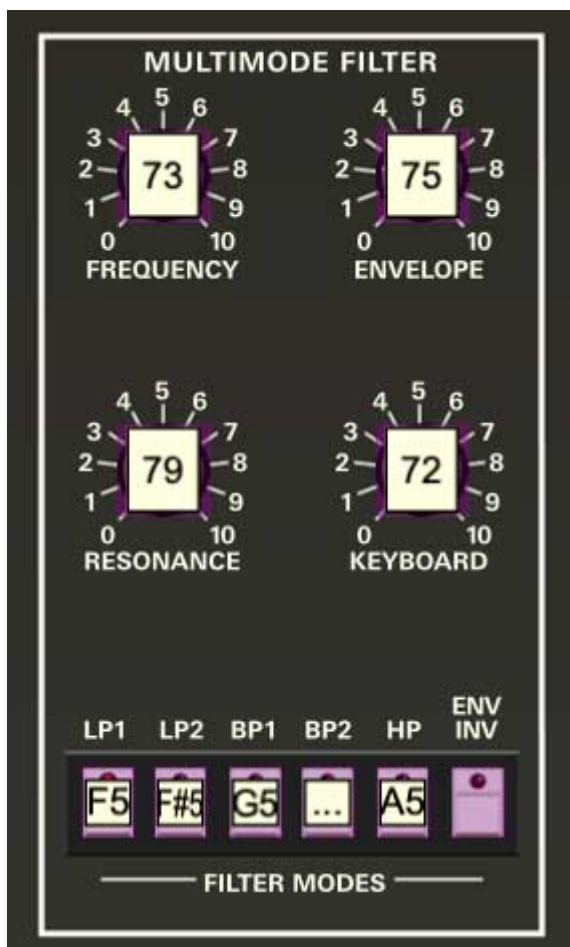
When in MIDI learn mode, any previously assigned controller numbers will show in squares. These indicate the MIDI continuous controller number of the assigned hardware control (these are also displayed in the *MIDI* library tab at left).

Once a MIDI controller has been assigned, in addition to real-time control of an Elka-X parameter, you'll also be able to record and play back controller data from a DAW.

The MIDI Tab

This is command central for all MIDI controller assignments. Here you'll be able to see information about all currently assigned controllers and adjust control ranges.

To view or hide the MIDI Tab, click the *MIDI* button in the top toolbar.

MIDI Learn button- This is almost exactly the same as enabling MIDI learn mode by right-clicking a control. Click the *MIDI Learn* button to enter learn mode (all controls turn purple). Unlike right-clicking on specific knobs, where Elka-X automatically exits controller assignment mode, clicking the *MIDI Learn* knob "stays on" to enable assignment of multiple hardware controls. This is handy for quickly assigning a bunch of knobs, sliders, or the buttons of a grid-style controller.

To assign multiple controls, click *MIDI Learn*, click an on-screen control, move the desired hardware knob or slider, continue clicking and assigning on-screen controllers until all desired controls are assigned, then click *Stop Learning* to exit learn mode.

Remember that a single hardware knob/slider/button isn't limited to controlling just one parameter - a single hardware controller can simultaneously operate as many controls as you'd like. Combined with the MIDI Tab's controller range and inversion controls explained below, this can be a very powerful and customizable way to control parameters.

New Mapping Type- This popup menu selects whether newly assigned MIDI mappings will be global (affects all sounds and doesn't change when different presets are selected) or saved with individual presets.

MIDI Tab Columns
Name- Displays the name of the parameter being controlled.

Type- There are five possible types of controller automation in Elka-X:

- **Note**- Notes played on a MIDI keyboard controller, expressed as C-1 to G9

- **CC (MIDI Continuous Controller)**- The standard 128 MIDI controller numbers as defined in the MIDI spec. More specifically, these are the controllers transmitted by hardware knob and slider controls. MIDI CC's can be used to control parameters in real-time or recorded and played back within DAW software.

- **MMC (MIDI Machine Control)**- The MIDI control protocol for tape machine-style transport controls. Back in the dark ages, this was used to control wonky old Tascam and Fostex reel-to-reel monsters, but it's useful if your MIDI controller has tape-style transport control buttons.

- **Pressure**- Most modern keyboard controllers transmit controller data when keys are pressed and released as they're held down. The vast majority of keyboard controllers with aftertouch transmit "mono" aftertouch only; in other words, aftertouch data is the sum of all keys to one single data stream. Note that Elka-X only responds to mono aftertouch.

- **Key**- This allows keys of the computer QWERTY keyboard to at as button controls for Elka-X's onscreen controls.

Value- Displays the specific automation controller. In the case of a *Note* this would show a MIDI note number (C-1 to G9, for a MIDI CC, this would be the MIDI CC controller number, etc. Clicking on the value opens a pop-up menu where all values are displayed and can be selected.

Preset- This slider works in conjunction with the *New Mapping Type* popup control. In the left position (gray background), the MIDI mapping is global (affects all sounds and doesn't change when different presets are selected), in the right position (lavender background), the MIDI mapping is saved with, and only affects the current sound preset.

The *Preset* switch is super nifty, because it means that MIDI mappings can easily be changed to global or per-preset status at any time.

Min- Sets a limit on the lowest value any automation control can set a mapped controller to. This actually recalibrates the range of the automation controller to the remaining parameter range.

Max- Sets a limit on the highest value any automation control can set a mapped controller to. This actually recalibrates the range of the automation controller to the remaining parameter range.

Curve - These allow the customization of how incoming MIDI CC controls affect the movement of Elka-X's onscreen controls, ranging from exponential to linear to logarithmic curves.

Super Cool Min-Max Tricks - Not only can parameter ranges be limited via the *Min* and *Max* knobs, mapped control destinations can be completely inverted by setting the *Min* knob all the way up and the *Max* knob all the way down (or anywhere in between).

Limiting and inverting parameter ranges with the *Min/Max* controls is particularly useful when multiplexing a single hardware control to operate multiple parameters. Because *Min/Max*, range inversion and *Curve* settings can be separately set for each onscreen control, the customization options are super flexible.

MIDI Tab Column Configuration Right-Click Menu
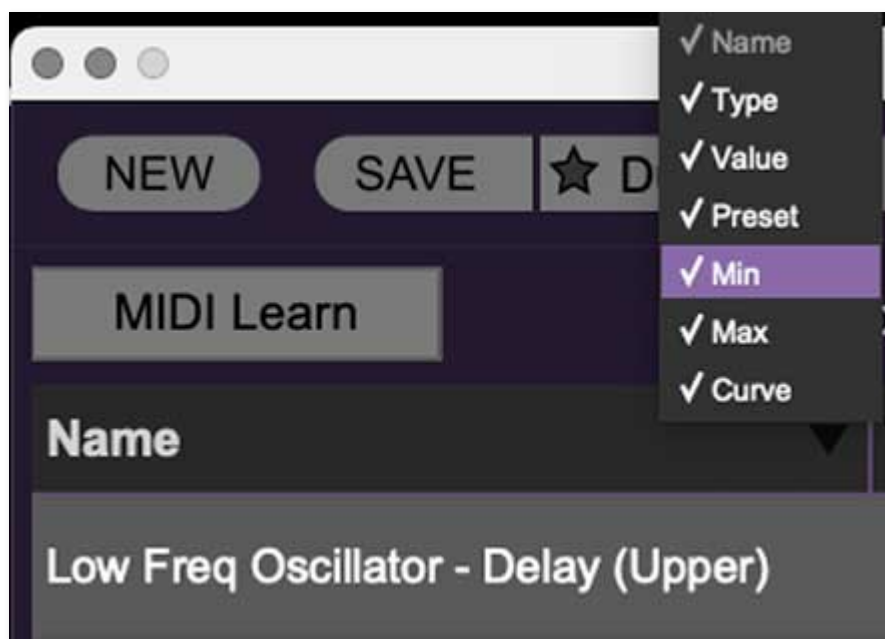
Right-clicking anywhere in the top row (*Name*, *Type*, *Value*, etc.) displays the column configuration menu. Checking/unchecking these allows hiding and display of each column. This has no effect on assignments.

MIDI Tab Parameters Right-Click
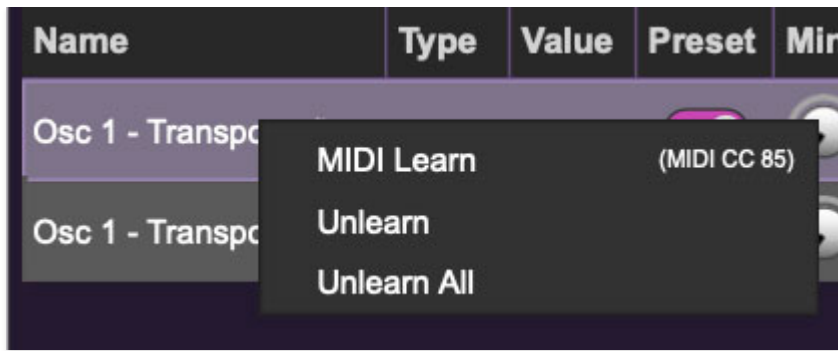
Right-clicking on an assigned parameter opens the menu above.

MIDI Learn- This is used to change the controller assigned to a particular parameter.

Unlearn- Deletes the selected automation parameter.

Unlearn All- Deletes all controller assignments for the patch. Elka-X will display a warning dialog prior to deletion in order to thwart potential unlearn-related disasters.
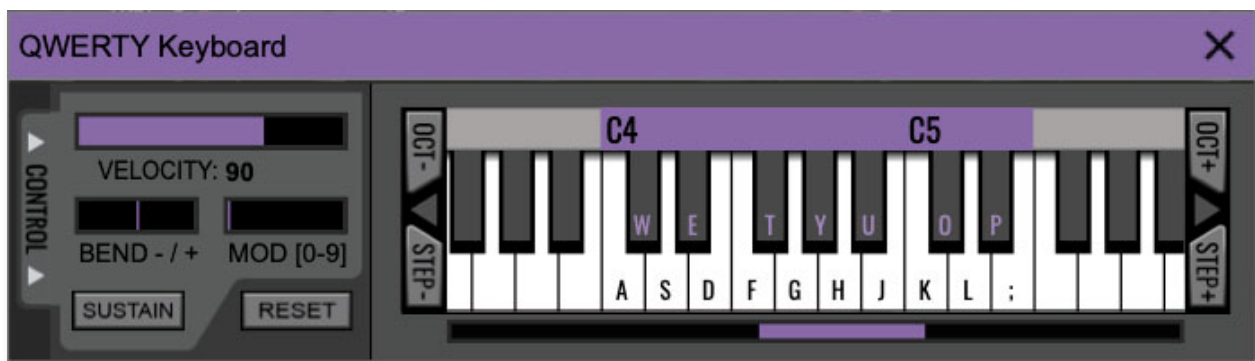
If you don't have a MIDI keyboard attached to your computer, the onscreen keyboard can be used to play notes, but clicking on pictures of keys gets old pretty quick, and it's impossible to play chords that way.

The better solution playing to Elka-X in lieu of a standard MIDI/USB keyboard controller is what we call the QWERTY Musical Typing Keyboard, or "MTK" for short. This allows your computer's keyboard to be used as a polyphonic controller, and also enables a few other tricks.

Following is a list of MTK keyboard modifiers and functions:

Opening and Closing the MTK - click the the circular keyboard icon in the top toolbar. To close the MTK, click the keyboard icon in the top toolbar, or click the *X* in the top right corner.

Play Notes- To trigger notes, simply press the corresponding computer keyboard key or mouse click the onscreen keys.

Adjust Currently Visible MTK Range- Slide the purple scroll bar horizontally to adjust the currently visible keyboard range.

Adjust Overall Visible Keyboard Range- Clicking and dragging the right edge of the MTL window allows the overall size of the window to be adjusted. This lets you view more or less of the onscreen keyboard. Note that the MTK window's borders cannot exceed the overall outside dimensions of the Elka-X window.

Shift Range Up/Down Octave- Click the *Oct-* and *Oct+* buttons at the top left and right of the onscreen MTK. The current range is displayed above the

keyboard.

Shift Range Up/Down Semitone- Click the *Step-* and *Step+* buttons at the bottom left and right of the onscreen MTK. The current range is displayed above the keyboard.

Hide/View Controllers- Clicking *Control* at the far left hides and displays velocity, bender, mod, and sustain control parameters. Hiding the control view makes more space available for the keyboard.

Set Note Velocity- Move the purple *Velocity* bar to adjust the output velocity of notes.

Pitch Bend- To pitch a note or notes, press the + or - computer keyboard keys while playing a note. Bend depth is determined by the *To Osc/Bend* slider (with all the mod routing controls on the left/middle of Elka-X's UI).Notes can also be pitchbent by clicking the mouse in the *Bend* area.

Mod Wheel- To add mod wheel modulation, press the number keys from *0-9* (above the character keys) while playing a note. The modulation amount will vary from none (*0*) to full modulation (*9*). Note that modulation will "stick" at the selected number; to disable modulation, click the *0* key. Mod can also be engaged by clicking the mouse in the mod bar area.

Sustain- The *Sustain* button mimics the functionality of a standard sustain pedal. Click the [TAB] key to engage sustain, or [SHIFT]+[TAB] to lock it. The *Sustain* button can also be engaged by mouse clicking it.

Reset- Initializes all MTK parameters including keyboard range and control parameters.

Settings

Clicking the settings gear opens a window with multiple tabs for configuring various "under-the-hood" settings. These are mostly set-and-forget kind of parameters - all the stuff you'll use most is on the front panel, where it belongs!

General
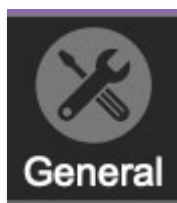
- **Add Undo For Control Changes With The Mouse**- Enabling this allows undo of knob, switch, and button adjustments. You'll want this on if you want the ability to undo all aspects of patch editing and programming.

- **Load Last Preset On Startup (Standalone Only)**- Automatically loads the last preset used when Elka-X standalone version is started.

- **Create A Log File For Usage-** This creates a text doc of all of Elka-X's internal and routines during use. It is mainly intended for our tech staff should you experience any issues. Clicking *Show Log Folder* opens the folder containing Elka-X log file docs.

- **Preset Folder-** Displays the current location of Elka-X's sound presets. This can be changed by clicking and typing in the field.

  - **Browse...** - Displays the current location of preset folder in the file manager.
  - **Set Default-** Sets the current displayed *Preset Folder* path as the default location

- **Clear Cache Files-** Deletes all log files, temporary sounds, and the image cache.

Interface

Allows customization of Elka-X's user interface settings.

- **Reset To Default Window Size-** Resets the Elka-X workspace to default size. Use this to reset the window size if the window somehow becomes too large for your display and can't be resized.

- **Tooltip Delay-** Tooltips are those informative bits of text that pop up when hovering over a control (go ahead and try it, we'll wait…). The *Tooltip Delay* setting defines how long you must hover before the tooltip pops up.

- **Knob Movement-** Defines how mouse movements relate to turning onscreen knobs. It defaults to *Vertical Drag*, but can be changed to *Horizontal Drag*, or *Rotary Drag*. This currently no setting for *Imperial Drag*, a sweet 90s alt-rock band featuring ex members of Jellyfish.

- **On Control Double-Click**- Defines what happens when the mouse is double-clicked on a control. If *Edit Value* is selected, an exact number can be entered by typing the number and hitting [ENTER] or [RETURN]. If *Sets Default Value* is selected, double-clicking a control resets it to its default value.

- **Mouse Wheel Adjusts Control Value-** Enabling this lets you adjust knob, slider, and switch values by moving the mouse wheel. This works great with a standard mouse wheel, but you'll want to disable it if you're using an Apple Magic Mouse (which will move the control AND scroll the window).

- **Show Tooltips When Adjusting Controls With Mouse-** Displays parameter tooltips/values when the mouse is hovered over a control or as a control is moved with mouse button down.

- **Show Tooltips When Automating Controls**- Enabling this causes control tooltip flags to show when automation data is being received.

- **MIDI Program Changes Should Change Current Preset-** Allows MIDI program change messages to change Elka-X patches.

- **Ask To Save Modified Presets-** This opens a dialog window asking if you'd like to save changes if a patch has been edited and a new patch is selected. If you're the type that likes to click through presets and tweak a control here and there, it can be annoying to have a popup window asking if you'd like to save every time you switch presets - if you're that person, keep this off.

- **Remember MIDI Mappings For New Plug-in Instances**- When enabled, Elka-X remembers all global MIDI Tab controller settings.
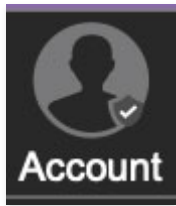
Account

Settings for your personal login information and account.

- **Email**- Displays the email address of the current login.

- **Update Login Info**- Clicking this opens the same email and password login screen you'll see when initially launching Elka-X and allows changes to be made.

- **View Account Settings**- This opens your personal account page on the Cherry Audio Store website containing information about modules purchased and more.

Software Update

- We often fix bugs and make improvements; below are options defining how Elka-X handles updates.

- **Check For Update-** Click this to see if an updated version of Elka-X is available.

Status:

- **Automatically Install Updates**- Updates are automatically downloaded and installed.

- **Ask Before Installing Updates**- By default, Elka-X automatically downloads new versions of modules when available. Checking this box defeats automatic updates and will ask if you'd like to install updates when they become available.

We'll never make changes that can potentially break existing patches, but if you're using Elka-X for live performances or in other "mission critical" situations, we recommend enabling *Ask Before Installing Updates*, because your dipwad singer is *never

gonna be cool about it when your synth/computer/onstage espresso machine goes down for a moment in a live performance.

- **Never Install Updates**- Elka-X never automatically installs updates.

- **Show Updates On Toolbar**- Checking this will display an icon in the toolbar next to the logo letting you know there's an update available.

Show Notifications From Cherry Audio- We occasionally will fire off in-app advertisements; disabling this checkbox will hide them. We hate repetitive, annoying ads as much as you, so we won't use this feature too often. When we do, it'll be for something super cool (like a killer sale), so we recommend leaving it on.

Audio/MIDI

Settings for audio and MIDI hardware input and output. **This tab is only visible in the standalone version of Elka-X.**

- **Output**- Use this drop-down menu to choose a physical audio output source. This defaults to *Built-In Line Output*, i.e. your computer's onboard system audio, but you'll get better fidelity with an external professional audio interface.

- **Sample Rate-** This sets Elka-X's global sample rate. Lower sample rates offer better performance, but if you have a fast computer, high sample rates may offer slightly improved fidelity.

- **Audio Buffer Size**- As with any digital audio app, this defines performance vs. note latency, and will largely depend upon computer CPU speed. A professional external audio interface will almost always exhibit better performance than "built-in" system audio. Lower settings will result in less latency (in the form of faster response to notes played), but will increase the chances of audio gapping or crackling noise.

- **Active MIDI Inputs**- Displays all available MIDI input sources, i.e. keyboards, pad controls, MIDI knob/fader control surfaces, etc. Check boxes to enable one or more devices. If you're using a fader controller

with touch-sensitive sliders (Mackie Control, for example) and Elka-X plays weirdo notes when you lean on the faders, uncheck it here to make that stop (incidentally, this happens to me all the time and scares the crap out of me).