The Hammond name is invariably associated with the tonewheel organs that changed the face of rock and jazz keyboards, but Hammond made a number of other not-exactly-organ keyboard instruments. The most ambitious of these by far was the Novachord. Released in 1939, it was a failed product in its day, because like many other forward-looking inventions, it was so far ahead of its time that customers didn't know what to make of it. For all intents and purposes, the Novachord was the world's first fully-polyphonic "divide-down" synthesizer, making use of the now-familiar tone generation system used in endless organs and string machines. It also included embryonic versions of analog synthesizer-style filter and envelope generators. Unfortunately, the aforementioned "what the heck is this thing" factor, its unstable room-heating 163 vacuum tubes combined with its huge weight (500 lbs!), and ultimately, a materials shortage at the start of WWII, brought Novachord production to a halt in 1942 with around 1000 produced.

These days, precious few have survived, and even fewer remain in working order. This is a shame, because the Novachord makes a sound like no other instrument - a sort of haunting and vibey "old film" tonality - particularly when swamped in spring or tape echo. In fact, years later, the Novachord found new life when used in 50s and 60s sci-fi film soundtracks.

Us Cherry Audio folks have a soft spot for any and all types of electronic music oddities, so when legendary DSP whiz Mark Barton (MRB) approached us with the idea of recreating the Novachord, we jumped on it. Mark's spot-on recreation truly captures the spirit of this unique instrument, and we hope you'll enjoy as much as we have.

*A special thanks to Joseph and Justin Martin Fill for invaluable access and recordings of their beautifully restored vintage Novachord.*

**Technical Assistance**

Cherry Audio's unique online store and automatic updating generally makes 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/

... or you can communicate directly with our friendly tech support staff at:

https://cherryaudio.kayako.com/

# Top Toolbar and Preset Browser



The purple strip at the top of the Novachord interface is where you'll load, save, and create sound presets. It also contains utility functions such as undo/redo, UI zoom and *Focus* controls, under-the-hood settings, and more. Let's go over them:

**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.
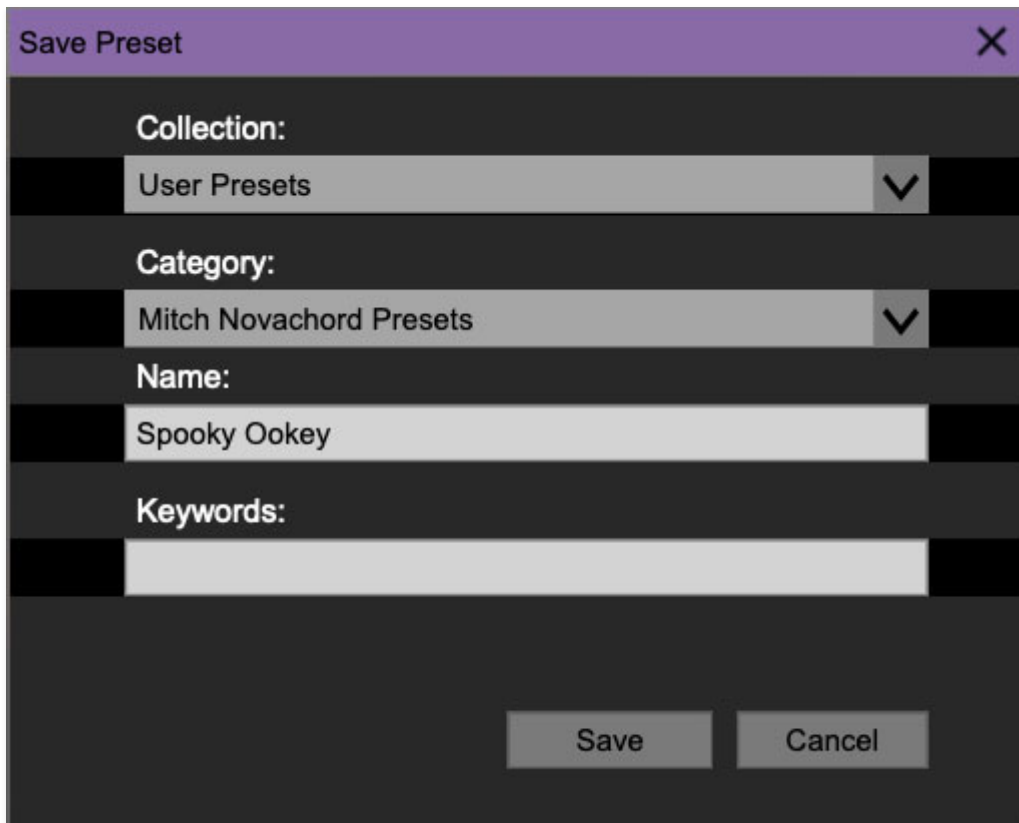


**Save**- Use this to save patches. There are a couple of levels of hierarchy:

- **Collection**- This is the top level of organization, and contains entire "sets" of presets. The *Novachord Presets* are the main included collection. We also include a *User Presets Collection* for storing your own presets, but you're free to create your own collections. To create a new collections, 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 separated 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 "organ," "spooky," or "pad," etc., to display keyworded patches when terms are typed in the *Search* field. Use commas to separate multiple keyword entries.
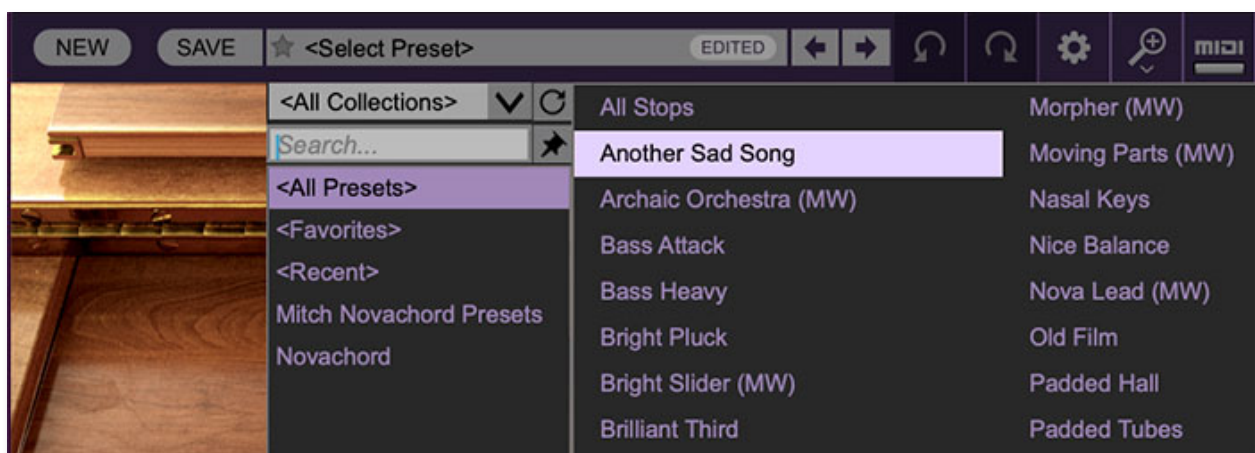


**Browsing Patches**- Patches can be browsed by clicking the *<Select Preset>* field. To select a preset collection, click in the area that says *<All Collections>* or on the downward-facing arrow next to it.

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.

***When playing Novachord's fabulous factory presets, make sure to move your MIDI controller mod wheel as there are lots of nifty built-in expressive mod routings (often affecting multiple controls at once).***
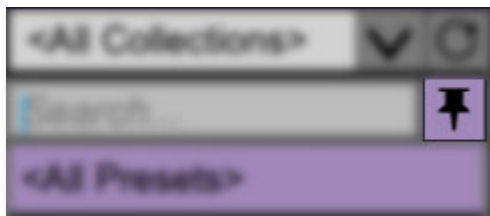
**Pin** - Clicking the push-pin icon locks the patch selection list open, allowing fast and easy browsing and auditioning of patches. Click the icon again to disable pin mode. when in pin mode, the up and down arrow keys can be used to select patches.

**Preset Step Back/Forward horizontal 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 circular arrows** - These undo or redo the last action. It remembers many steps, so if you really mucked something up, keep on 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.
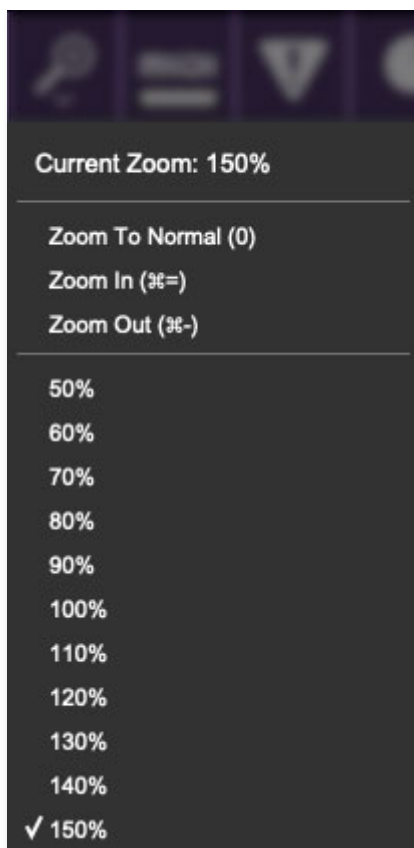
**Zoom Magnifying Glass**- Click to resize the Novachord interface. Selecting *100%* returns the user interface to native size.

**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, "why won't this thing stop making noise?!?" stuck-note incidents.
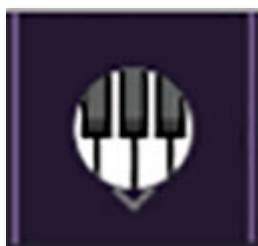


**QWERTY Musical Typing Keyboard-** Opens an onscreen keyboard allowing a standard QWERTY computer keyboard to be used for playing music notes. For more information, see **QWERTY Musical Typing Keyboard (MTK)** section.
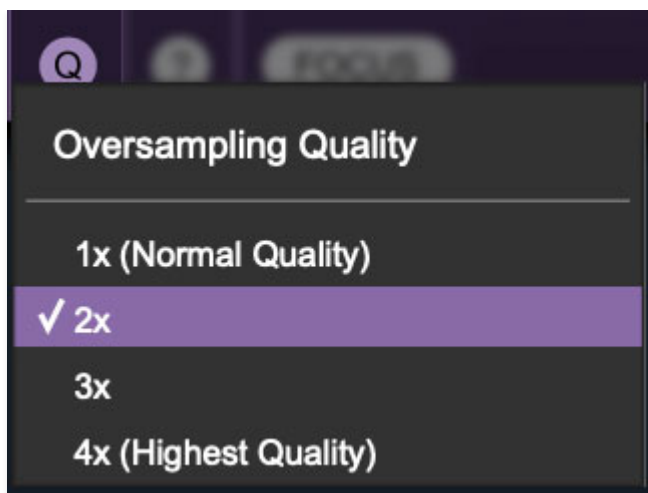
**Q Oversampling Quality -** The Q button sets Novachord's internal oversampling rate; the higher the setting, the better audio fidelity will be, with the caveat that more computer processing power will be required.

Internal processing can be set to *1x* (same rate as the current sample rate of the host DAW or in the *Settings>Audio/MIDI* window for the standalone version) or to *2x*, *3x*, or *4x* the current sample rate. The sample rate is downsampled at the instrument output stage to match the current host sample rate.

For example, if the current DAW/instrument sample rate setting is 48 kHz, and oversampling is set to 2x, Novachord's internal processing runs at 96 kHz, and is then reduced back to 48kHz at the output stage.
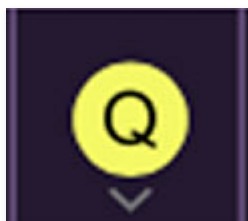


When oversampling is set to any multiple greater than *1x*, the *Q* button glows yellow.

Dependent on a number of factors (audio system D/A converter quality, monitor speakers, the nature of the current Novachord patch, etc.), you may not hear a big difference with higher settings. Most normal human-persons won't hear any difference between oversampling settings, but it's lots of fun to argue about in forums instead of actually making music!
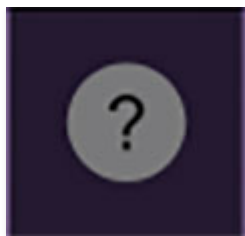
**? (Help)** - Clicking this launches your web browser and opens this help document. (Confusing circular logic thing there, right?)

## Focus Button

If you're using a tiny laptop, the user interface can potentially be hard to see. With this in mind, the *Focus* button conveniently blows up Novachord's view 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.

Using *Focus* mode couldn't be easier - just click the *Focus* button the top menu bar, and the recessed panel controls are enlarged and centered. 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.



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

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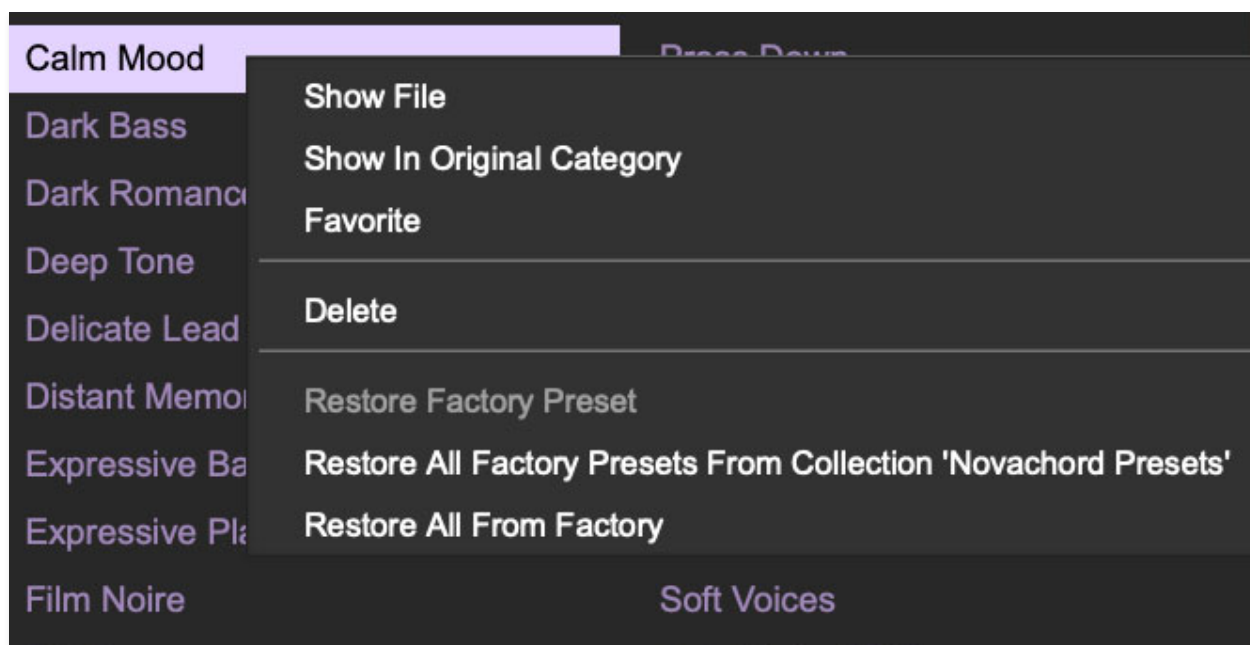
**Show File**- This displays the selected preset in the Mac or Windows folder containing it. This is useful for backing up or sending a preset file to another user.

**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 'Novachord Presets'**- If any patches from the "factory" Tortoise 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 Novachord bank mentioned above is the only factory bank, so this function and the *Restore All Factory Presets From 'Novachord Presets'* above have the same effect.

# Front Panel Controls



## Tone and Resonator Controls

Novachord's tone and resonator settings control various filter types, allowing extensive timbral shaping. Unlike typical analog synthesizer filters, the tone generators' output signals are split and routed in parallel to *all* of the filters, processed and then summed together to create a composite tone.



**Deep Tone**- Sets the level of tone generator signal with a one-pole (6dB per-octave slope) lowpass filter with a fixed frequency of 160 Hz applied.

## Resonators



The three resonators are bandpass filters, operating consecutively in low, mid, high frequency ranges.

**First Resonator level and frequency**- The lever controls the volume of the resonator. The bandpass filter frequency is 400 Hz.

**Second Resonator level and frequency**- The lever controls the volume of the resonator. The bandpass filter frequency is 800 Hz.

**Third Resonator level and frequency**- The lever controls the volume of the resonator. The bandpass filter frequency is 2000 Hz.



**Brilliant Tone**- Sets the level of tone generator signal with a one-pole (6dB per-octave slope) highpass filter with a fixed frequency of 2000 Hz applied.

**Full Tone**- This actually isn't a filter at all - it simply controls the amplitude of the dry (no filters applied) tone generator signal. This is important because the filters can be reedy by nature (yeah, you know them).

**Bright/Mellow**- A one-pole lowpass filter affecting overall instrument brightness. This was a two-position switch on the original instrument, but we've made it a continuously variable control.

**Balancer**- Adjusts volume tracking between the lower and upper ranges of the keyboard. Moving the lever downward toward *Soft Bass* causes lower notes to become quieter and higher notes to get louder; moving the lever upward toward *Strong Bass* causes lower notes to get louder and higher notes to become quieter.
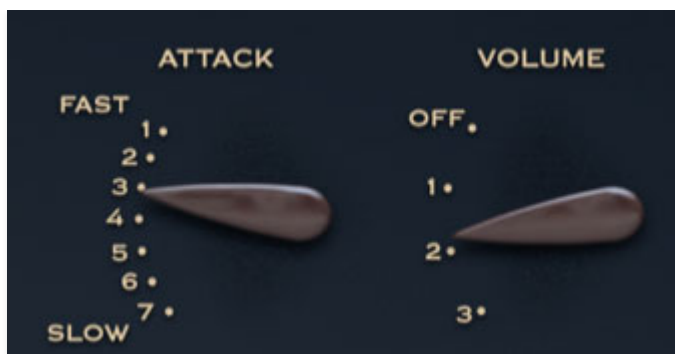
**Attack**- Unlike a typical synthesizer ADSR-style attack control that only affects the onset of the amplitude curve, Novachord's *Attack* lever shapes attack, decay, and sustain amplitude characteristics (release is "instant-off" like an organ at all settings).

The Attack control's seven fixed settings range from a percussive, piano amplitude (*1*) curve up to a slow, sustaining shape (*7*).

***When a sustain pedal is used, a fixed release time of around 3.5 seconds is added to note releases.***

**Volume**- Sets overall instrument volume.

***Note that Novachord responds to MIDI Expression (CC 11) to emulate the Novachord's volume pedal.***



**Vibrato**- Enables the Novachord's unique vibrato circuit. *Vibrato I* uses square-wave modulation, as used in the earliest Novachord models; *Vibrato II* makes use of a more rounded-off square wave, as used in later Novachords.

**Vibrato Depth**- Sets the modulation range of the vibrato with three preset depths.

**Reverb**- Sets the amount of either a room-style reverb (lever up) or a larger hall-style reverb (lever down).

**Limiter**- Flipping the toggle up engages a gentle limiter that helps avoid overloading when playing louder sounds. The amber lamp above illuminates to show the limiter is engaged. The lamp glows red when peaking - if this happens, back off the *Volume* control (or stop playing chords with your elbows).

## Novachord... In A Room, With a Speaker

It's important to remember that unlike modern keyboard instruments, the Novachord didn't have a direct output jack of any kind - instead, it had a built-in 1930's-era tube amplifier and speakers. With this mind, we emulated its amp+speaker combo, and we strongly advise using one of the reverbs at all times, because it was alway heard "in a room" of some sort.

# Keyboard and Polyphony

The original Novachord instrument was fully polyphonic, that is, all 72 keys could sound at once. Unlike a piano, it's almost impossible to get many notes ringing out simultaneously on a Novachord, so we made the executive decision to limit polyphony to 32 notes maximum for those of you still running Windows XP or some such on a 286 XT (I'm a Mac guy, don't ask me...).

# 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 a Novachord 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 whole section to best take advantage of Novachord's swell MIDI control assignments.

In this example, we'll assign a hardware knob/slider control to the *First Resonator* amount lever.
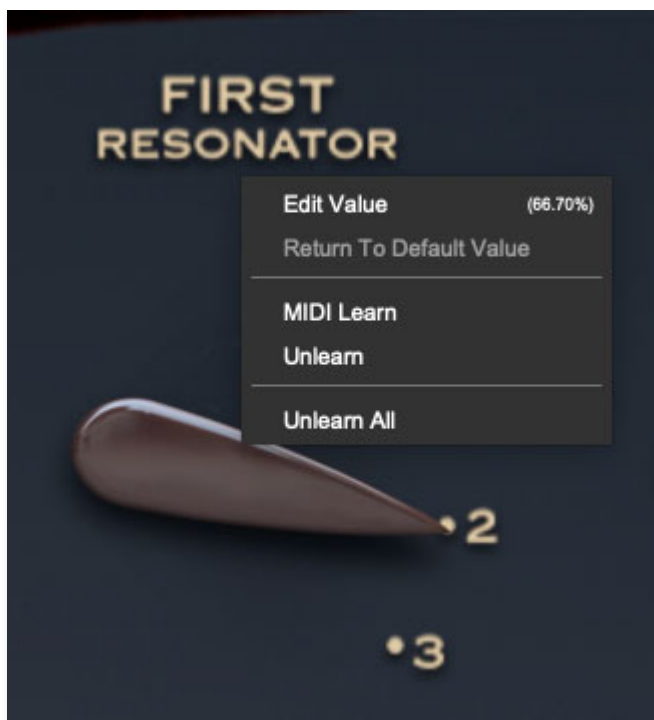
Begin by right-clicking on the *First Resonator* amount lever and and selecting *MIDI Learn.*



A transparent blue overlay appears over the lever indicating that it's in learn mode. Now move the desired hardware control device. The blue overlay disappears and the hardware control will move the onscreen slider. If you get

cold feet (or accidentally put the wrong control into learn mode), learn mode can be aborted by right-clicking and selecting *Stop Learning*.

This is the basic procedure for assigning hardware controllers to almost any Novachord control.
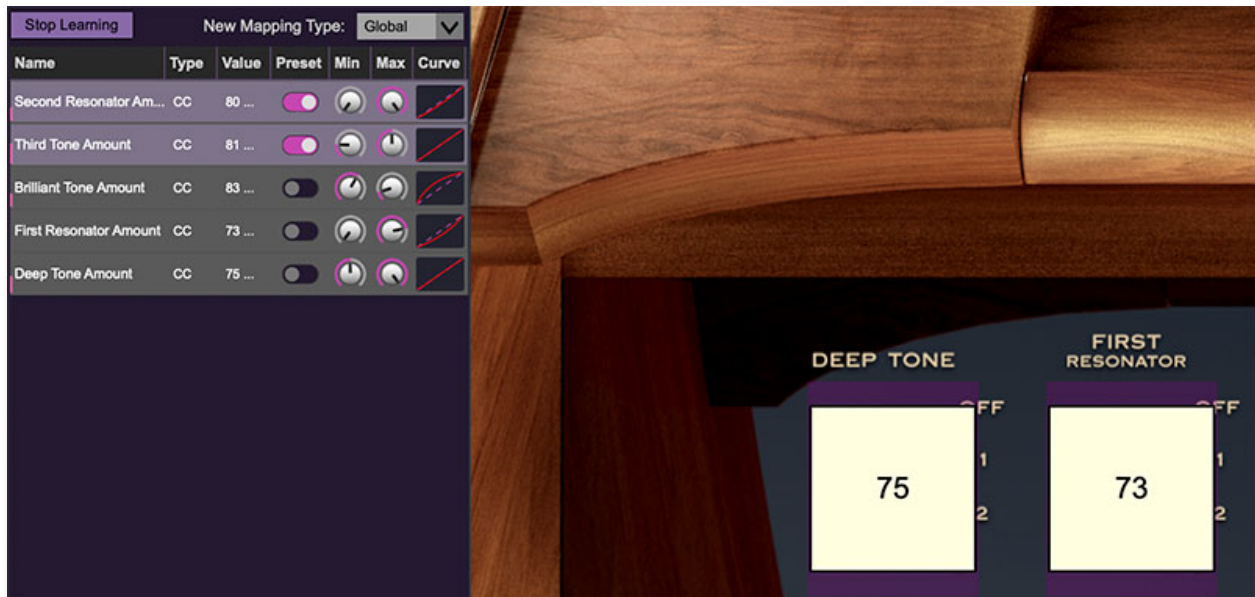


When in MIDI learn mode, any previously assigned controller numbers will show in squares. These indicate the MIDI continuous controller number of the assigned hardware control (these are also displayed in the *MIDI* library tab at left).

Once a MIDI controller has been assigned, in addition to real-time control of a Novachord 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.
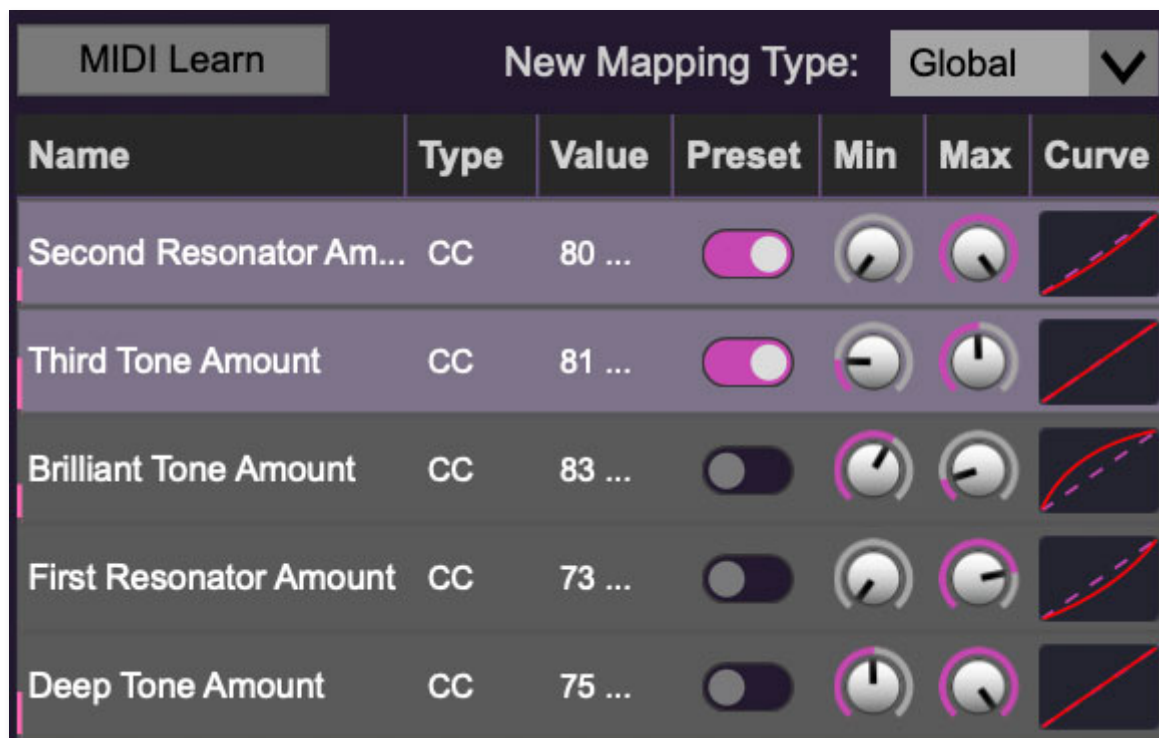


**MIDI Learn button**- This is almost exactly the same as enabling MIDI learn mode by right-clicking a control. Click the *MIDI Learn* button to enter learn mode (all controls turn purple). Unlike right-clicking on specific knobs, where Novachord automatically exits controller assignment mode, clicking the *MIDI Learn* knob "stays on" to enable assignment of multiple hardware controls. This is handy for quickly assigning a bunch of 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. (And remember, when we stop learning, we stop growing, and... oh forget it.)

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.

**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 Novachord:

- **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 Novachord only responds to mono aftertouch.

- **Key**- This allows keys of the computer QWERTY keyboard to at as button controls for Novachord'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. (A lot of folks have asked us for this feature.)

**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.

- **Super Tricky Min-Max Tricks**- Not only can parameter ranges be limited via the 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. Along with the *Curve* control, the customization possibilities are super flexible.

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

# MIDI Tab Column Configuration Right-Click Menu
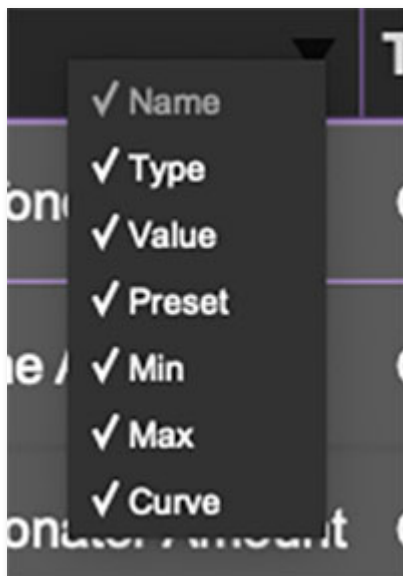


Right-clicking anywhere in the top row (*Name*, *Type*, *Value*, etc.) displays the column configuration menu. Checking/unchecking these allows hiding and display of each column. This has no effect on assignments.

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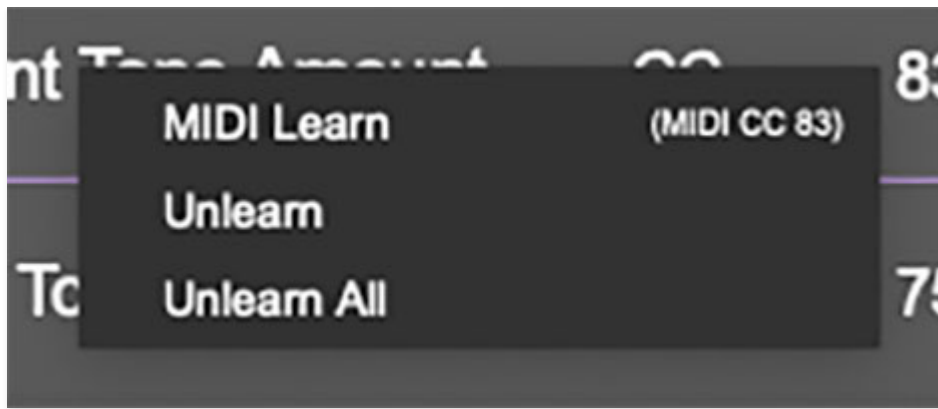
Right-clicking on an assigned parameter opens the menu above.

**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. Novachord will display a warning dialog prior to deletion in order to thwart potential unlearn-related disasters.
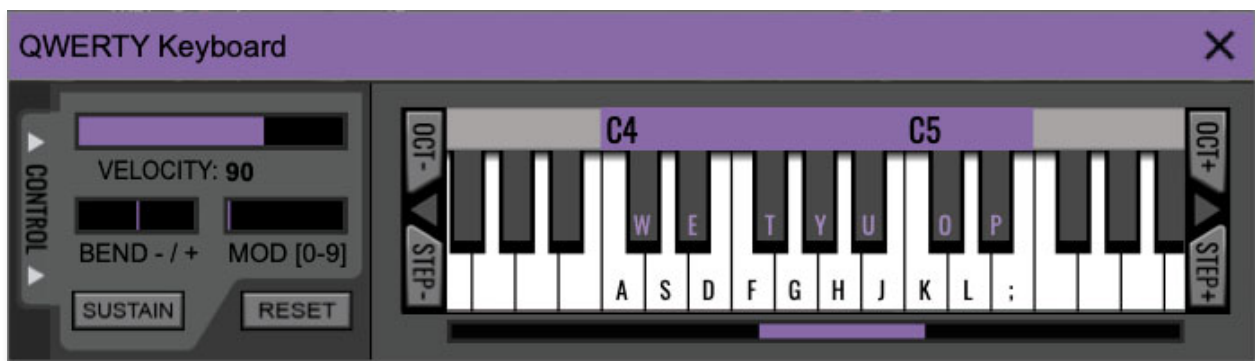
If you don't have a MIDI keyboard attached to your computer, the standard QWERTY computer keyboard can be used to play notes - we're pretty sure you've got one of those! We'll refer to this as the "MTK." Following is a list of MTK keyboard modifiers and functions:
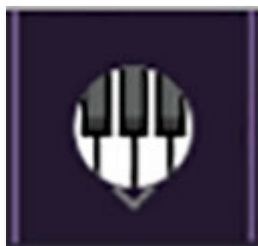


**Opening and Closing the MTK** - click the the circular keyboard icon in the top toolbar. To close the MTK, click the keyboard icon in the top toolbar, or click the *X* in the top right corner.

**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 Novachord 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**- Note velocity has no effect (Novachord does not respond to velocity).

**Pitch Bend**- Pitch bend has no effect (Novachord does not respond to pitch bender messages).

**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; everything you'll usually use is right on the panel.

# General
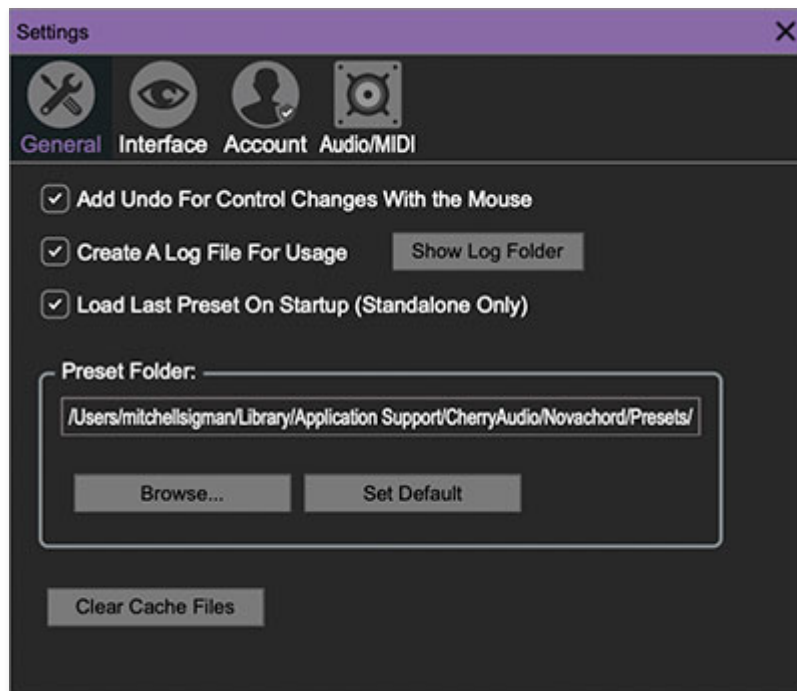


- **Add Undo For Control Changes With the Mouse**- Enabling this allows undo of knob/slider/button adjustments. You'll want this on if you want the ability to undo all aspects of patch editing and programming.

- **Create A Log File For Usage-** This creates a text doc of all of Novachord'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 Novachord log file docs.

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

- **Preset Folder-** Displays the current location of Novachord'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
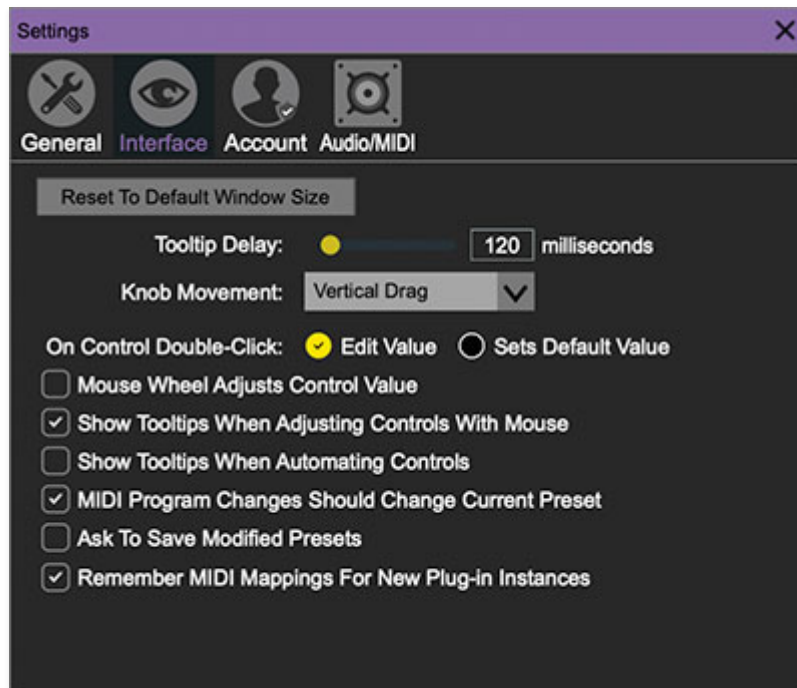


Allows customization of Novachord's user interface settings.

- **Reset To Default Window Size-** Resets the Novachord 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.

- **Theme-** Allows selection of 14 nifty floor surfaces beneath the pedals.

- **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* if you're one those folks that cut their teeth on the *Steinberg Model E* VST back in 2000.

- **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 Control 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 clicked.

- **Show Tooltips When Automating Controls-** Displays parameter tooltips/values next to controls any time a control is changed, i.e. if a control is moved via an assigned MIDI controller or a *Perform* panel knob, etc.

- **MIDI Program Changes Should Change Current Preset-** Allows MIDI program change messages to change Novachord 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 window pop-up 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, Novachord remembers all MIDI Tab controller settings.

# Account
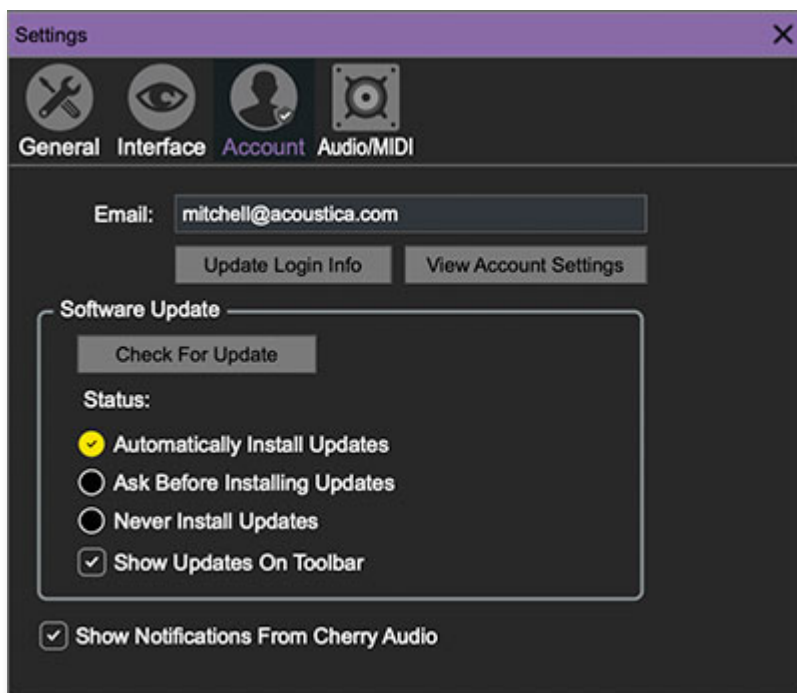
Settings for your personal login information and account.

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

- **Update Login Info**- No, this isn't a place for news and tour dates for yacht rock superstar, Kenny Loggins. Clicking this opens the same email and password login screen you'll see when initially launching Novachord.

- **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 Novachord handles updates.

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

  **Status-**

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

- **Ask Before Installing Updates**- By default, Novachord 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 we recommend enabling *Ask Before Installing Updates* if you're using Novachord for live performances or other "mission critical" situations.

- **Never Install Updates**- Novachord 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 may 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 fabulous sale), so we recommend leaving it on.

# Audio/MIDI
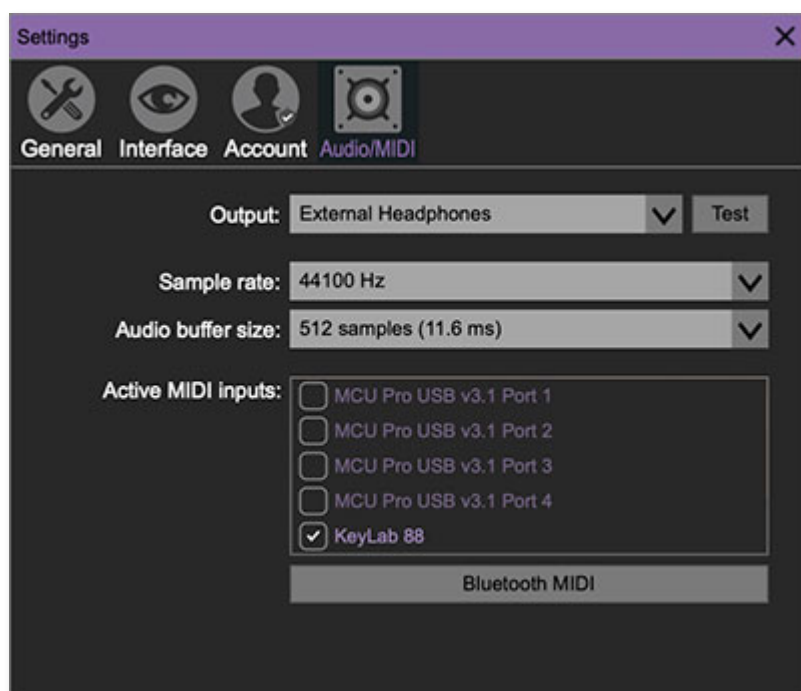


Not to be confused with audiomidi.com, where I used to work (talk about a not-fun job), these are settings for audio and MIDI hardware input and output.

**This tab is only visible in the standalone version of Novachord.**

- **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. The biggest audible difference is usually reduced background noise or hum.

- The *Test* button will produce a brief sine wave when clicked; this will help with troubleshooting, aka, "WHY THE HECK ISN'T THIS MAKING ANY NOISE?!?"

- **Sample Rate-** This sets Novachord'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**- Enable MIDI input sources, i.e. MIDI/USB keyboards, pad controls, MIDI knob/fader control surfaces, etc. Check boxes to enable one or more devices. **If a MIDI/USB controller isn't working, make sure the appropriate box is checked here.** (We put this this piece of info *way* in the back of the manual, to make it extra challenging to find out when things aren't working.)