

The Voltage Modular Synthesizer Expander Module is an emulation of the classic Oberheim® Synthesizer Expander Module, aka the "SEM." Originally released in 1974, the keyboardless, mono SEM module was intended as a companion to the Oberheim DS-2, one of the earliest digital sequencers. Soon thereafter, Oberheim realized they could interface a digitally scanned keyboard, mount the whole mess in a big box, and create polyphonic synthesizers, beginning with the Two Voice, followed by the Four Voice, and finally the beastly Eight Voice (be sure to check out [Cherry Audio Eight Voice](#), our super-rad virtual instrument emulation).

Though it was a simple, barebones monosynth, the SEM sounded fantastic, and had a tone quality very different than the common fuzzy, fat Moog sound, thanks to its 12 dB/oct state-variable filter. With lowpass, bandpass,

highpass and notch modes, this flexible filter was the star of the show. We've precisely recreated it here with a filter section and Phasor effect programmed by award-winning synth designer, Mark Barton (MRB).

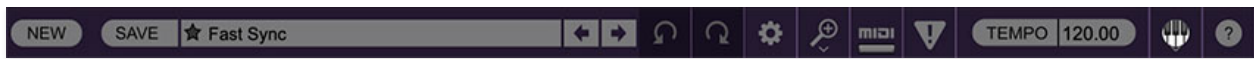
### **Technical Assistance**

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**.

... or you can communicate directly with one of our ~~surly and grumpy~~ outgoing and friendly tech support staff at:

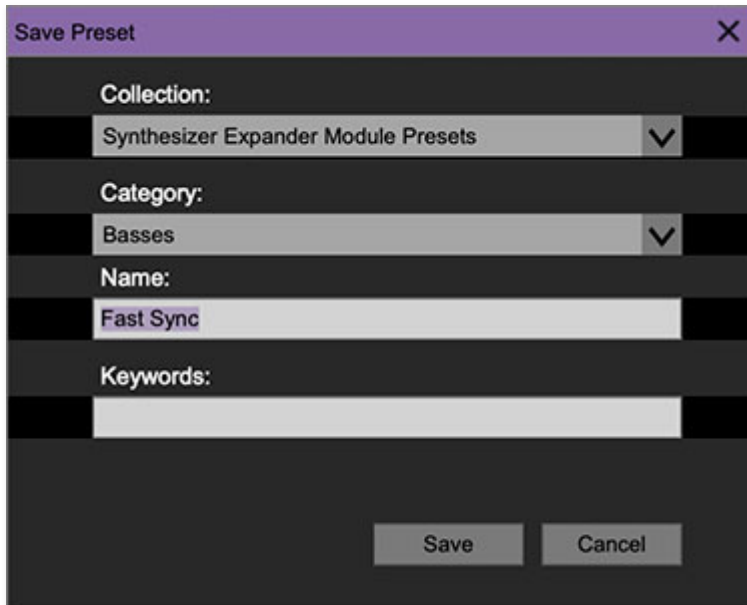
<https://cherryaudio.kayako.com/>

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

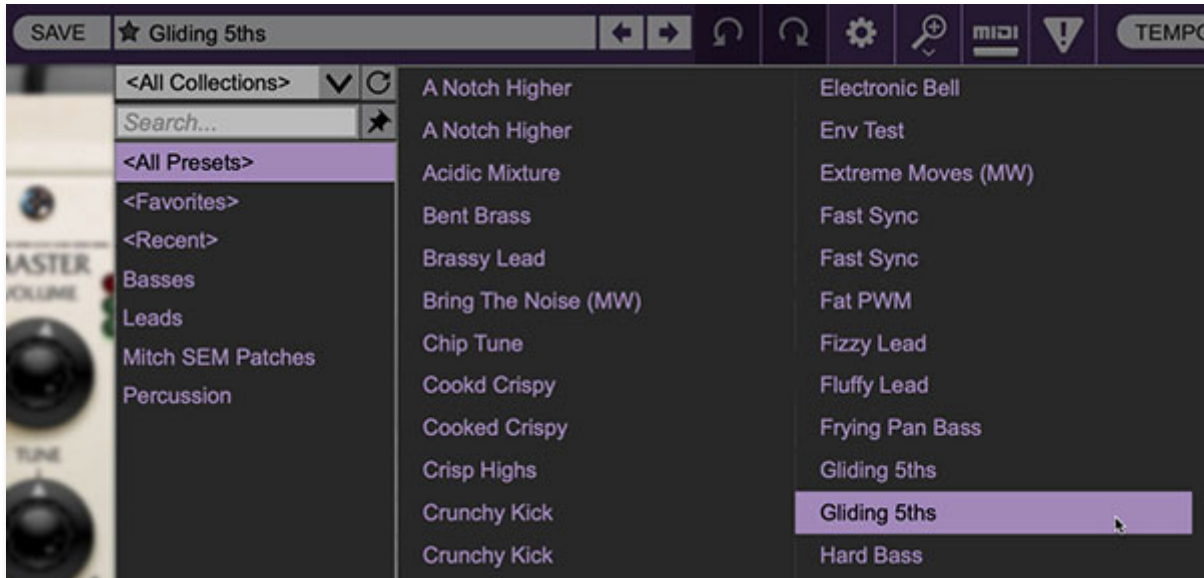
**New**- Opens a new blank patch preset. If an unsaved patch is currently open or you've modified an existing saved patch, a dialog asks if you'd like to save the patch in its current state. This greatly reduces the possibility of losing an edited unsaved patch.



**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 *Synthesizer Expander Module 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.

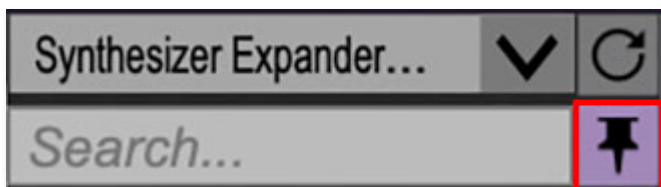
- **Patch**- A patch is an individual sound. To save a patch, simply type the name in the *Name* field and click *Save*.
- **Keywords**- You can add descriptive words such as “lead,” “bass,” etc., to patches to make them appear when terms are typed in the *Search* field. Use commas to separate multiple 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 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. (Thanks to Starship/Phil Bennett for this useful feature suggestion.)

**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 clickin'...

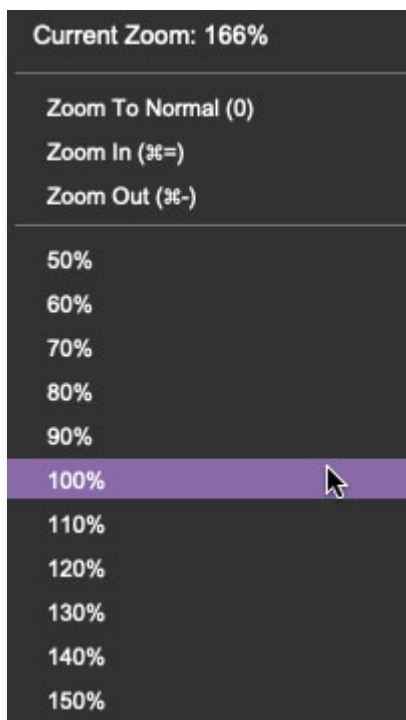
**Settings-** This is where user preferences for user interface, audio interfaces, user account, and more are configured. See the **Settings** section for full information.

### **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 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.

(If the ! MIDI Panic button doesn't shut off the sound, make sure the *VCA* switch at the bottom of the panel isn't in set to *On* position.)

**Tempo (Standalone Version Only)**- Displays current internal tempo setting. The internal tempo affects the LFO and Echo sections when their corresponding *Sync* switches 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 Synthesizer Expander Module. 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 **QWERTY Musical Typing Keyboard (MTK)** section.

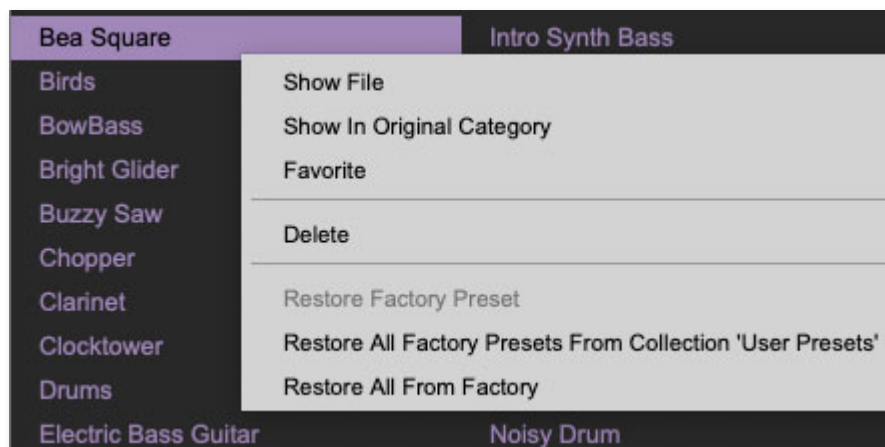


**Help** - Clicking this launches your web browser and opens the help document you're currently reading. Which means you're already here...

**Synthesizer Expander Module (top center) and yellow Cherry Audio logo (front panel/left side)** - Clicking either of these displays "about" information, and shows the version number and current registered user ID.

## Preset List Right-Click Functions

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**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.

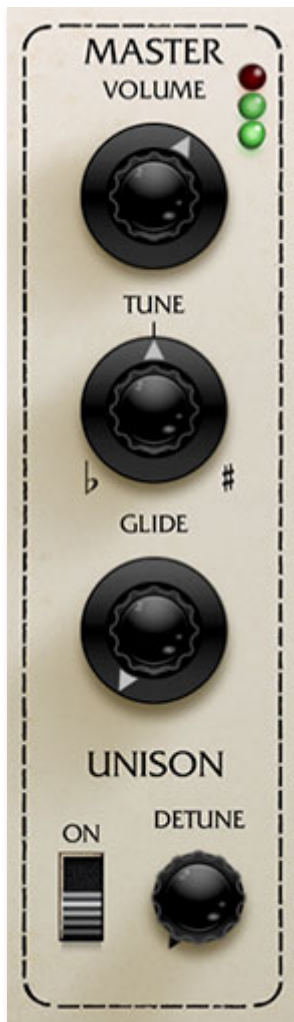
**Delete**- Deletes the selected preset.

**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 'Synthesizer Expander Module Factory Presets'**- If any patches from the "factory" bank are edited and saved, selecting this command restores *all* of them to their unaltered "factory" setting.

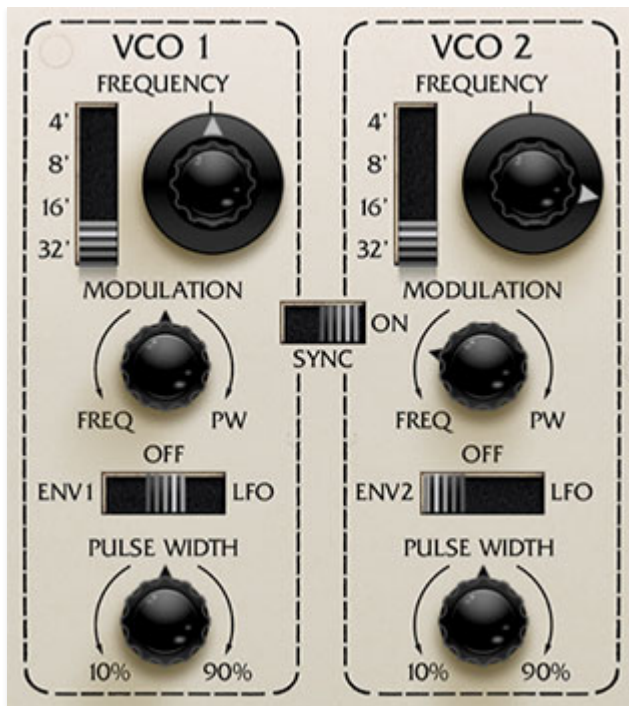
**Restore All From Factory**- If any patches from the "factory" banks are edited and saved, selecting this command restores *all* of them to their unaltered "factory" setting.





**Volume and meter-** Sets overall volume. The meter should be kept "in the green" to avoid ugly digital clipping.

**Tune-** Master tuning for the entire instrument, with a range of a half-step up or down.



Synthesizer Expander Module includes two almost identical voltage-controlled oscillators. The only difference are their modulation routing options.

**Range-** Sets the pitch range for each oscillator in octaves. These are at standard organ footage settings of 32', 16', 8', and 4'.

**Frequency knob-** This can be used to fatten up two oscillator patches by detuning a small amount, or for "building-in" a set interval. Its range is a smidge over a fifth, up or down.

**Modulation amount knob and source switch-** The mod amount knob is bidirectional; rotating it left from center position adds pitch modulation, rotating it right modulates pulse width of the pulse wave. Center position is off, i.e. no modulation.

The three-position slide switch selects the oscillator mod source from three sources:

- **Env 1 (VCO 1) / Env 2 (VCO 2)-** Modulation source is envelope 1 or envelope 2. Selecting the envelopes as mod source doesn't "disconnect" them from the VCA or VCF.
- **Off-** Disables modulation.
- **LFO-** Enables mod from the onboard LFO.

**Pulse Width-** Sets the width or "duty-cycle" of the pulse wave. It has no effect on the saw wave. This defaults to 50%, i.e., a perfect square wave.

Moving the knob left or right narrows its width as well as the thickness of sound until it almost disappears at its extremes.

**Sync**- This causes VCO 1 to force reset the start of VCO 2's waveform to the beginning of its cycle, resulting in a wide range of harmonic tones from VCO 2. The range of tones can be varied by adjusting VCO 2's *Frequency* controls.

**Choosing oscillator waveforms**- *One unusual aspect of the original instrument's design is that the oscillators themselves contain no waveform controls. Instead, the level of saw and pulse waves is adjusted via the mixer knobs at the bottom of the VCF section.*

The Synthesizer Expander Module filter section represents a departure from the 24 dB "ladder" style filter often seen in vintage synths. Like the Oberheim SEM module it's based on, ours uses a 12 dB state-variable filter. This refers to its curves - it can function as a lowpass, bandpass, or highpass filter and features a knob allowing a continuous sweep from lowpass to highpass response (with "notch" filtering in the middle position). This gives it a great deal of flexibility, and the 12 dB curve gives it a brighter overall tonality than a typical ladder filter. The classic state variable filter generally sounds awesome, and our model of it really does it justice!

If you're not familiar with how filters work, a lowpass filter allows frequencies *below* the cutoff frequency setting to pass through, but blocks frequencies *above* the cutoff frequency. Highpass is the opposite of lowpass mode: high-frequency content remains, but low frequencies are removed as the cutoff frequency increases. Sliding the *Bandpass* switch enables Bandpass mode combining both lowpass and highpass modes, leaving sound only "in the middle." The cutoff frequency lies roughly halfway between the falloff on each side. A notch filter does the opposite - it removes a middle piece of the audio spectrum but leaves other frequencies intact. (That might not sound useful, but setting the filter to *Notch* mode and slowly sweeping the cutoff frequency with an LFO creates nifty phaser-like tones - great for imitating vintage string synths.)



**Frequency-** Sets the frequency where frequency attenuation begins with its effect dependent upon the currently chosen lowpass/bandpass/notch/highpass/etc. filter mode.

**Resonance-** Emphasizes sound energy at and around the cutoff frequency by adding feedback from the filter's output back to its input. This is useful for creating commonly heard synth "wah" tones, especially when the cutoff frequency is modulated with an envelope generator or one of the LFO's.

**Modulation amount knob and source switch-** Applies modulation to the filter cutoff frequency. The mod amount knob is bidirectional; rotating it right from center position adds positive modulation, rotating it left adds negative modulation. Center position is off, i.e. no modulation.

The three-position slide switch selects the filter mod source from three sources:

- **Env 1 (VCO 1) / Env 2 (VCO 2)-** Modulation source is envelope 1 or envelope 2. Selecting the envelopes as mod source doesn't "disconnect" them from the VCA or VCF.
- **Off-** Disables mod.
- **LFO-** Enables mod from the onboard LFO.

**LP>HP/Notch control-** Continuously varies the filter response from lowpass to highpass as the knob is rotated from left to right. The middle position creates a notch response.

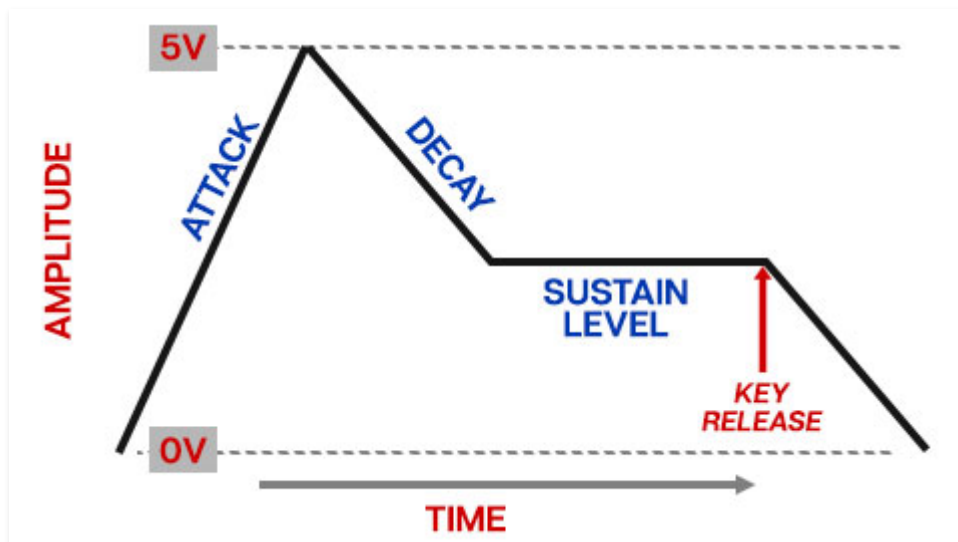
**BP (bandpass) switch-** Alters the filter response to bandpass when engaged (i.e. combination of lowpass and highpass leaving frequencies "in the middle." The LP>HP knob is disabled and gets grayed when the BP switch is enabled.

**VCO 1 / VCO 2 Saw/Pulse level-** The *VCO 1* and *VCO 2* knobs adjust the volumes of the saw and pulse waves for VCO 1 and 2, respectively. These are bidirectional knobs as well - rotating them left from center position increase the saw wave level, rotating it right increase the volume of the pulse wave. Center position is off (**if you're getting no sound, check these first**).

**Noise level-** Sets the level of pink noise - the original instrument had a pink noise generator, not the more common white noise. For those of you keeping score at home, the random signal of pink noise represents each octave across the frequency spectrum equally, and sounds duller to the ear than white noise.

The original instruments included two attack/decay/sustain (ADS) envelope generators. These function much the same as more common attack/decay/sustain/release (ADSR) envelopes, the only difference is that the decay and release stages are combined into a single control.

## How the Envelope Generators Work



When a voice sees a gate voltage from a note, the envelope outputs a dynamically changing voltage, according to the settings of its stages.

- The *Attack* stage defines how long it takes for the output voltage to rise from 0 to 5 volts.
- Once the *Attack* stage reaches 5V, it moves to the *Decay* phase. If the key is released, the *Decay* knob defines how long it takes for the voltage to fall back to zero. If the key is held, the *Decay* time defines how long it takes to fall to the *Sustain* level setting.
- The note then holds at the *Sustain* level until it is released, and fades to zero at the time set by *Decay* knob - the *Decay* knob effectively does "double-duty," acting as a decay and a release control.



## Envelope Controls

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**Attack**- Defines the length of time for voltage to rise from 0V to 5V when a key is played.

**Decay**- If the key is released, the *Decay* knob defines how long it takes for the voltage to fall back to zero. If the key is held, the *Decay* time defines how long it takes to fall to the *Sustain* level setting.

**Sustain**- Sets the voltage (i.e. the level) the envelope holds at following the *Attack* and *Decay* phases.

## Envelope 1 and 2 Routing

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As indicated by the parentheses on the front panel, Env 1 generally affects the VCA, i.e., amplitude. If VCO 1's three-way mod routing switch is set to the *Env 1* position, it will also modulate VCO 1's pitch.

Env 2 is mainly intended to modulate VCF cutoff frequency, but because it's not hard-wired, VCO 2's three-way mod routing switch needs to be in the *Env 2* position for cutoff mod to occur. In addition to filter cutoff frequency, Env 2 can also be used to modulate VCO 2's pitch when VCO 2's three-way mod routing switch is set to the *Env 2* position.





Synthesizer Expander Module includes a basic sine wave-only low-frequency oscillator for modulation purposes.

**Mod Wheel switch-** Switching this to the up position automatically configures your MIDI/USB controller's mod wheel to control LFO depth control. This makes setting up the LFO with a mod wheel super easy.

If the Mod Wheel switch is on and your controller's mod wheel is at zero, the LFO won't have any signal output, soooo... **if the LFO doesn't seem to be working, make sure the *Mod Wheel* switch is in the off/down position (or push up your controller's mod wheel).**

**Frequency (*control unlabeled*)-** The *Rate* knob sets the speed of the LFO, from 0.08 to 15 Hz (with *Sync* switch off) or from 8 beats up to 1/64th note triplets (*Sync* switch on). The LED beside it flashes at the current mod rate.

**Sync-** When the *Sync* switch is in the up position, LFO speed will lock to host tempo when used within DAW software, or to the current tempo in the top menu bar when using the standalone version.



**VCA switch-** Synthesizer Expander Module's VCA has only one exciting control, but it's important to understand. It's located in the middle, directly above the master *Output* knob. When set to *Env 1* position, amplitude is controlled by envelope 1; this where you'll generally leave it when playing with a keyboard or sequencer controller. The *On/Ext* position latches the VCA open; this useful for drones (or times when you're too lazy to actually press down keys. We've all been there.)

The red LED to the left of the switch will glow when the VCA is open. We think it's a funny spot for an LED, but that's how the original is.

# Echo

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The built-in echo has a vintage tone and its repeats are ever-so-slightly spread in the stereo field to widen up patches.

**On switch**- Guess what? This turns on the Echo effect.

**Time**- Sets delay time, from 1 to 2000 ms. If the *Sync* button is enabled, time settings snap to synchronized note values.

**Sync**- The *Sync* switch locks the delay 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 SEM standalone version 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.

**Mix**- Sets the ratio of clean to effected sound.

# Phasor

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This one is admittedly ridiculously simple, but its DSP was created by our frequent collaborator, Mark Barton (MRB). He managed to dig up the circuit diagrams for the rare-as-hen's-teeth Oberheim Phaser stomp box and modeled it, and it sounds awesome.

**On switch**- Turns on the Phaser effect.

**Speed**- Sets the phaser's internal LFO speed from 0.10 to 5 Hz. The LED flashes at the current mod rate.

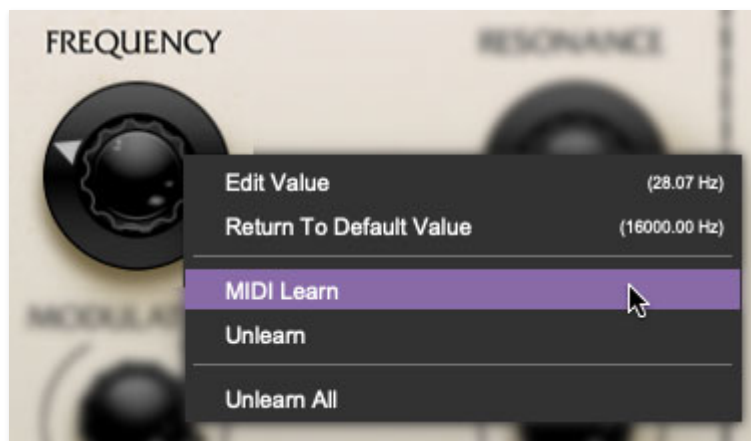
Assigning internal and external hardware controls adds a whole new dimension of control and musicality to patches, and it's really easy to do. The MIDI Tab is where all controller assignments can be viewed and tweaked. First we'll show how to assign an external hardware controller to a Synthesizer Expander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

## Basic External Hardware Control Assignment

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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 MIDI control assignments.

In this example, we'll assign a hardware slider/knob control to the filter *Frequency* (aka, cutoff) slider.



Begin by right-clicking on the *Fc* slider in the *VCF* 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 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 control.

## The MIDI Tab

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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.

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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 any parameter, you'll also be able to record and play back controller data from a DAW.



To view or hide the MIDI Tab, click the *MIDI* button in the purple 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 Synthesizer Expander Module 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.

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:

- **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.
- **Aftertouch-** Besides sounding like a 1981 Melissa Manchester record, some 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.
- **Key-** This allows keys of the computer QWERTY keyboard to act as button controls for 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* menu. 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 MIDI mappings can easily be set to global or per-preset status at any time. (A lot of folks 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.

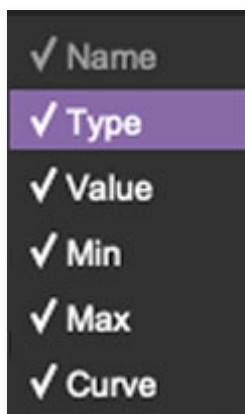
- **Super Tricky Min-Max Tricks**- Not only can parameter ranges be limited via the the *Min* and *Max* knobs, mapped control destinations can be completely inverted by setting the *Min* knob all the way up and the *Max* knob all the way down (or anywhere in between).

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 onscreen controls, ranging from exponential to linear to logarithmic curves.

## MIDI Tab Column Configuration Right-Click Menus

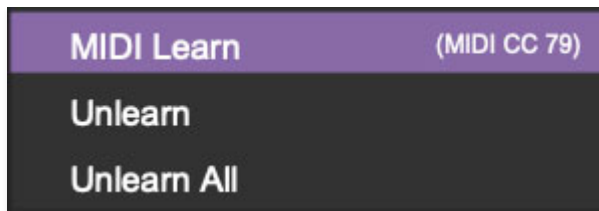
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Right-clicking anywhere in the top row (*Name*, *Type*, *Value*, etc.) displays the column configuration menu. Checking/unchecking these allows hiding and display of each column. This has no effect on assignments.

## MIDI Tab Parameters Right-Click

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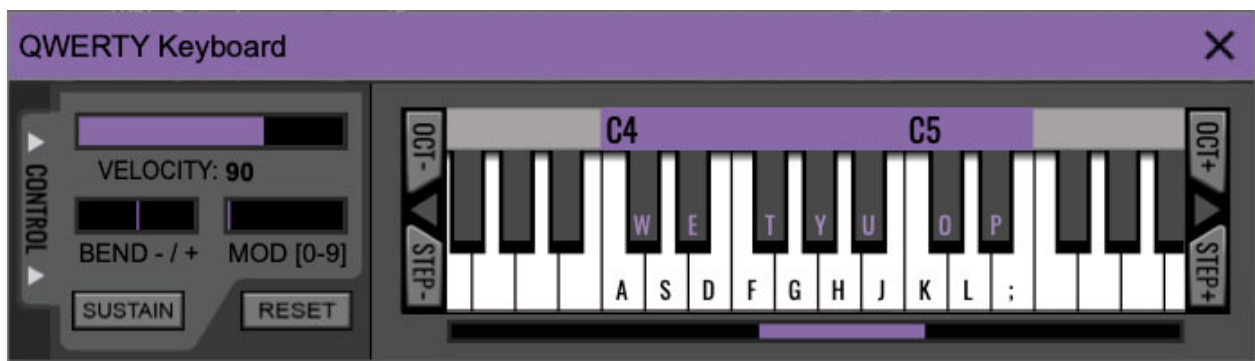


Right-clicking on an assigned parameter opens the menu above.

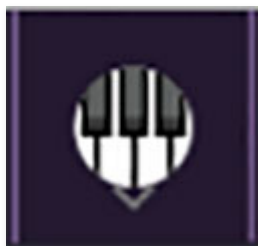
**MIDI Learn**- This is used to change the controller assigned to a particular parameter.

**Unlearn**- Deletes the selected automation parameter.

**Unlearn All**- Deletes all controller assignments for the patch. A warning dialog pops up 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 MTK 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 MG-1 Plus 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.

**Pitch Bend-** To pitch a note or notes, press the + or - computer keyboard keys while playing a note. Bend depth is a whole step, up or down. 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.

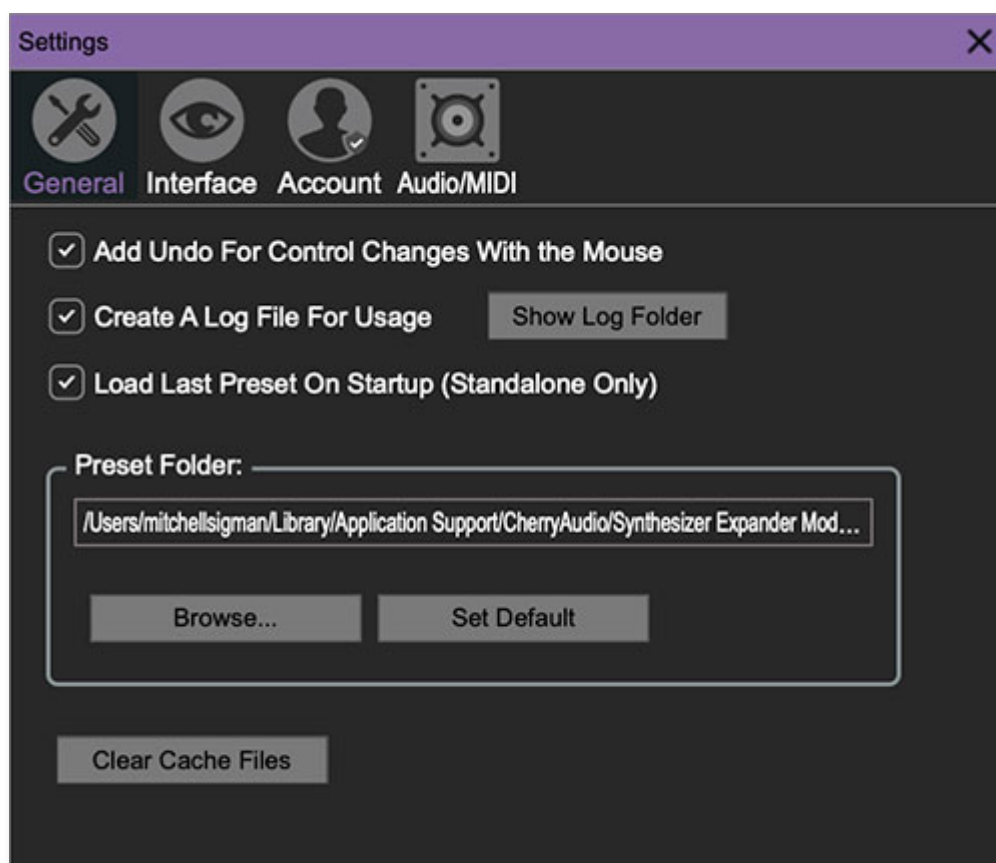
**Sustain-** The *Sustain* button mimics the functionality of a standard sustain pedal. Click the [TAB] key to engage sustain, or [SHIFT]+[TAB] to lock it. The *Sustain* button can also be engaged by mouse clicking it.

**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 want to tweak is on the front panel, as it should be!

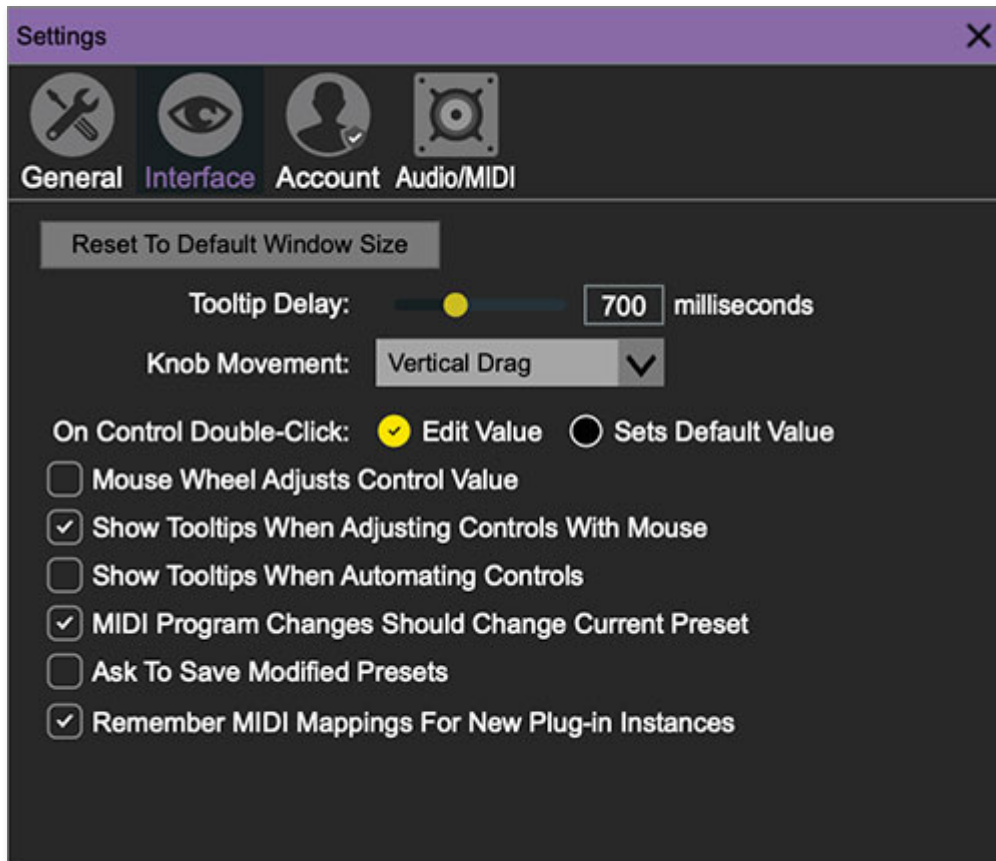
## General



- **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 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 Synthesizer Expander Module log file docs.
- **Load Last Preset On Startup (Standalone Only)**- Automatically loads the last preset used when the standalone version is started.
- **Preset Folder**- Displays the current location of 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 user interface settings.

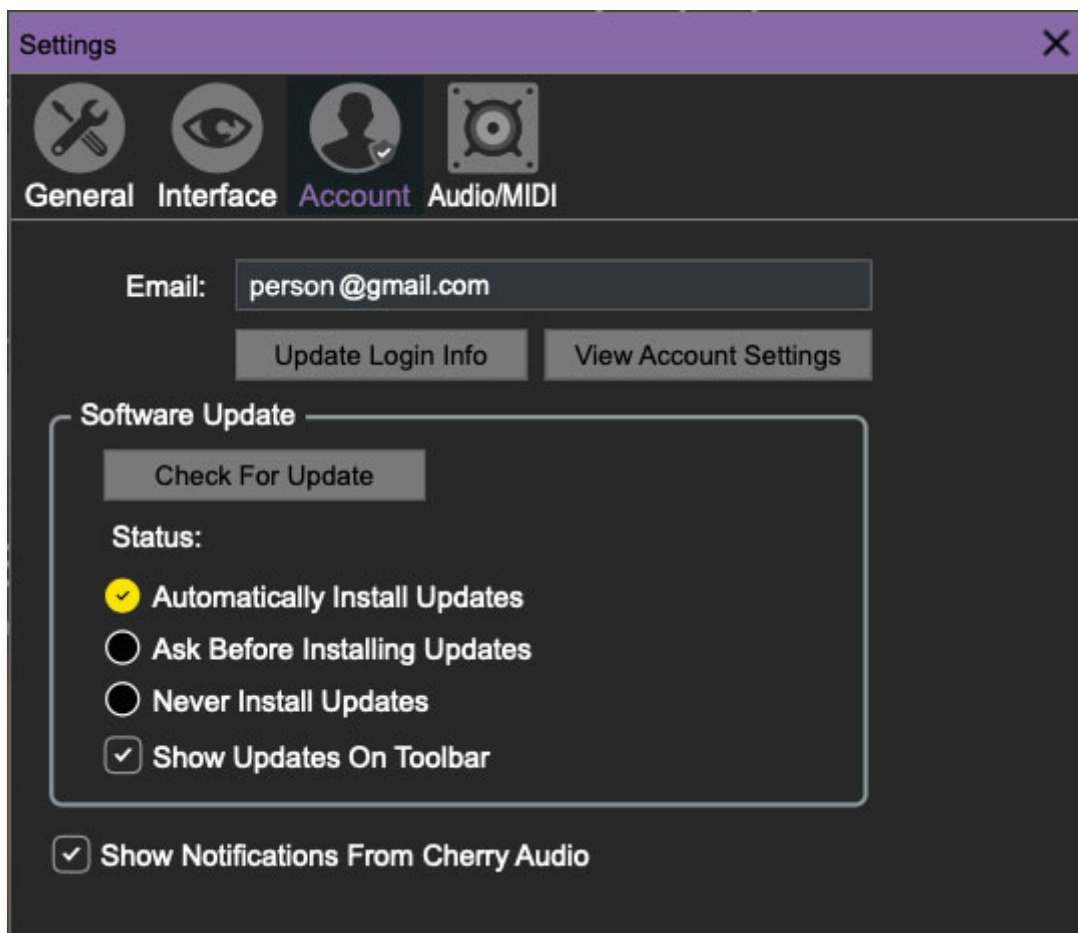
- **Reset To Default Window Size**- Resets the workspace to default size. Use this to reset the window size if the window somehow becomes too large for your display and can't be resized (pretty sure we fixed that bug a while back though!).
- **Tooltip Delay**- Tooltips are those informative bits of text 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 which how mouse movements related 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 Synthesizer Expander Module 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, all global MIDI Tab controller settings are stored and apply to new instances.

## Account

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Settings for 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.
- **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 Synthesizer Expander Module handles updates.
- **Check For Update**- Click this to see if an updated version is available.

### Status-

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

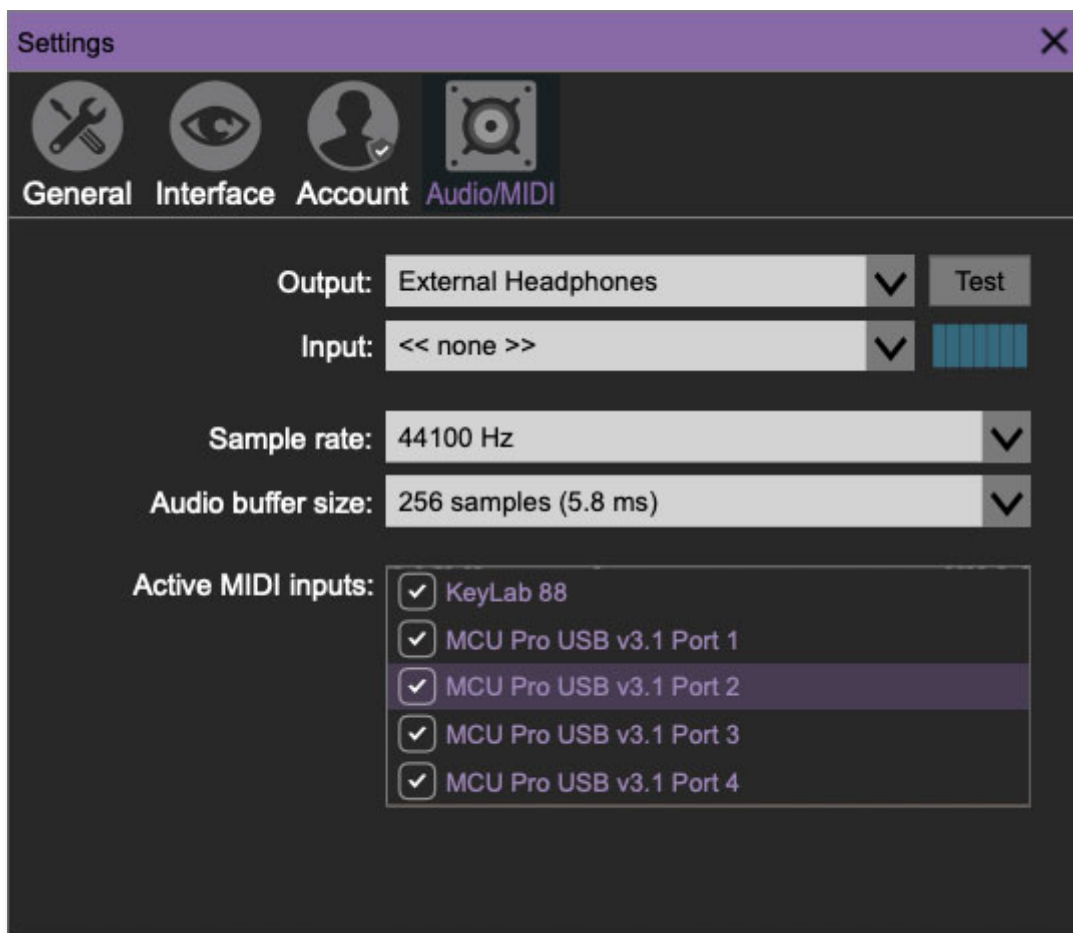
- **Ask Before Installing Updates**- By default, updated versions automatically download when available. Checking this box defeats automatic updates and will ask if you'd like to install updates when they become available.

We'll never make changes that can potentially "break" existing patches but we recommend enabling *Ask Before Installing Updates* if you're using Synthesizer Expander Module for live performances or other "mission critical" situations.

- **Never Install Updates**- Updates are never automatically installed.
- **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



Not to be confused with audiomidi.com, where I used to work (which ranked a solid zero on the fun meter), these are settings for audio and MIDI hardware input and output.

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

- **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, but external audio hardware also offers greater flexibility in terms of number of inputs and outputs and built-in mic or low-level instruments pres (i.e. electric guitars). The *Test* button will produce a sine wave when clicked; this will help with troubleshooting, aka, “WHY THE HECK ISN’T THIS MAKING ANY NOISE?!?”
- **Sample Rate-** This sets the 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 in standalone mode, 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 figure out why things aren't working.)