The portable synth masterpiece that needs no introduction... originally released in 1971, it's perhaps the best-known and loved analog synthesizer ever made. It also was the first self-contained synthesizer that could be easily taken to a gig. Though its innards weren't 100% identical to its massive modular brethren, it was very similar and shared the thick, juicy, "fat" analog sound that set a bar for analog synthesis that remains unchallenged 50 years later!

Cherry Audio's Miniverse was conceived as the ultimate tribute to the original instrument. DSP master and frequent collaborator Mark Barton went to great depths recreating its every idiosyncrasy, and we're very proud of the results. Unlike our other replica instruments, we resisted the urge to "improve" the original with modern additions - in this way, the joy, simplicity, and fidelity of the original shines through unabated. (Ok, we *did* add polyphony, and a sidechain input to run external signals into the juicy ladder

filter, but no other modern updates). We hope you'll enjoy Miniverse was much as we do!

Manual Layout

This manual will detail each section of Miniverse; the order of the chapters follows the signal flow (as opposed to the physical layout of the front panel).
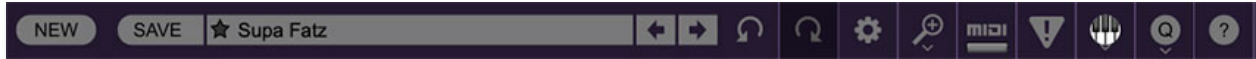
Technical Assistance

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/

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

https://cherryaudio.kayako.com/

Top Toolbar and Preset Browser

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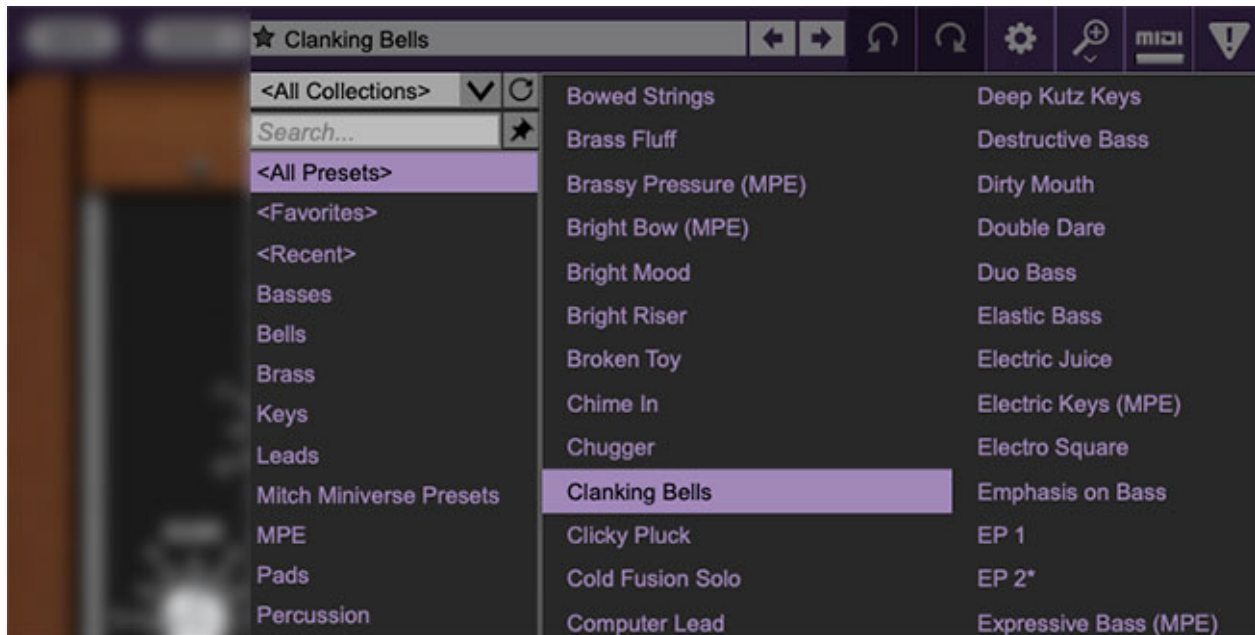
New- Opens a new blank patch preset. If an unsaved patch is currently open or you've modified an existing saved patch, a dialog asks if you'd like to save the patch in its current state. This greatly reduces the possibility of losing an edited unsaved patch.

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 *Miniverse 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 "bass," "lead," "spaceship," etc., to patches to make them appear 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.
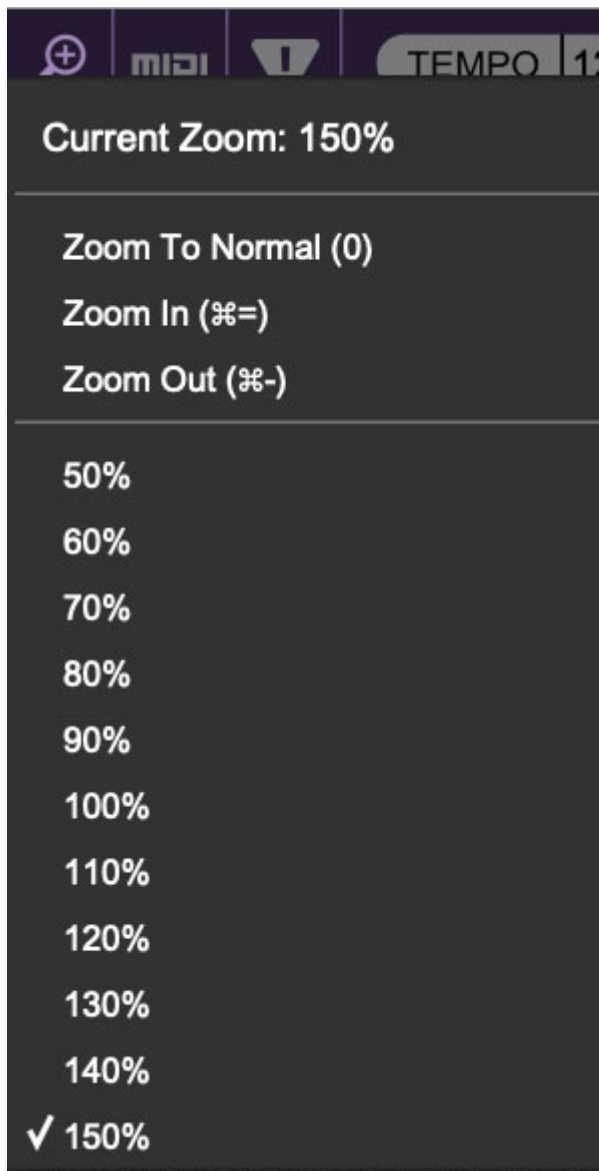
Pin - Clicking the push-pin icon locks the patch selection list open, allowing fast and easy browsing and auditioning of patches. Click the icon again to disable pin mode. when in pin mode, the up and down arrow keys can be used to select patches.

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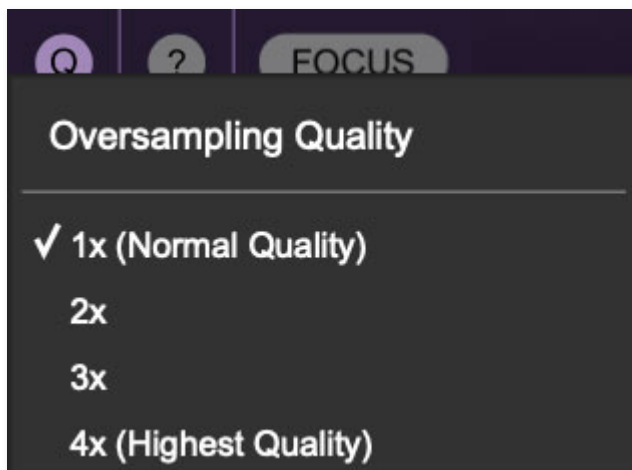
Zoom Magnifying Glass - Click to resize the Miniverse interface. Selecting *100%* returns the user interface to native size.

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.
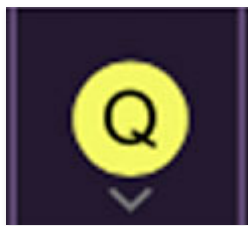

Q Oversampling Quality - The Q button sets Miniverse's internal oversampling rate; the higher the setting, the better audio fidelity will be, with the caveat that more computer processing power will be required.

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, Miniverse's internal processing runs at 96 kHz, and is then reduced back to 48kHz at the output stage.

If the current DAW/instrument sample rate setting is 192 kHz and oversampling is set to 4x, Miniverse's internal processing will run at 768 kHz, and you will very briefly hear the most ameeeezing synthesizer sound quality ever experienced by mankind before your computer instantaneously explodes in a fiery, white-hot supernova blaze. Ok, maybe not.

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

Help- Clicking this launches your web browser and opens this help document. (Confusing circular logic thing there, right?)
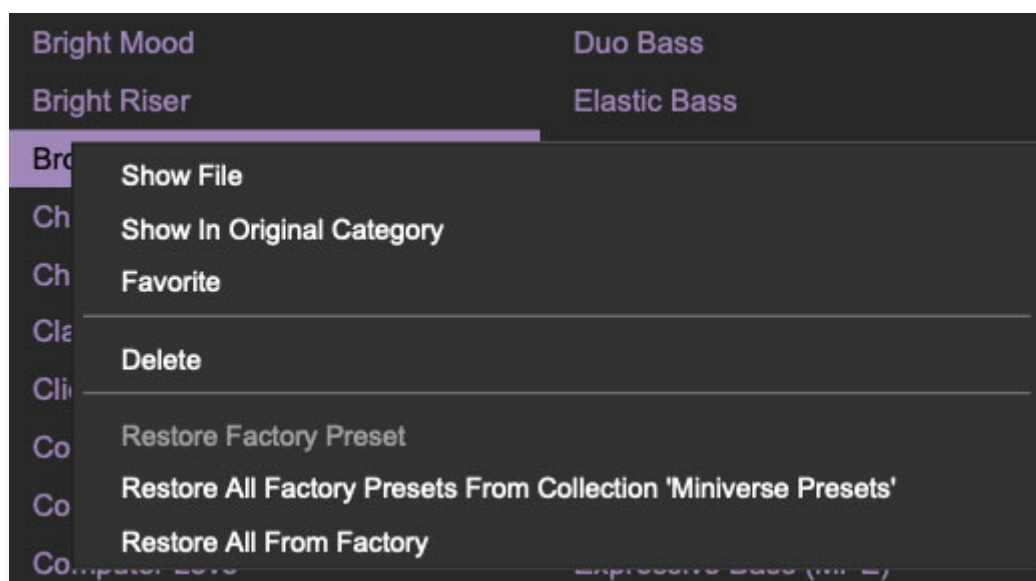

Miniverse by Cherry Audio badge - Clicking this displays "about" information, and shows the version number and current registered user ID.

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 Miniverse'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. (Guess what? YOU'VE GOT MAIL!)

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. (Or just ghost it if you don't do the confrontation thing.)
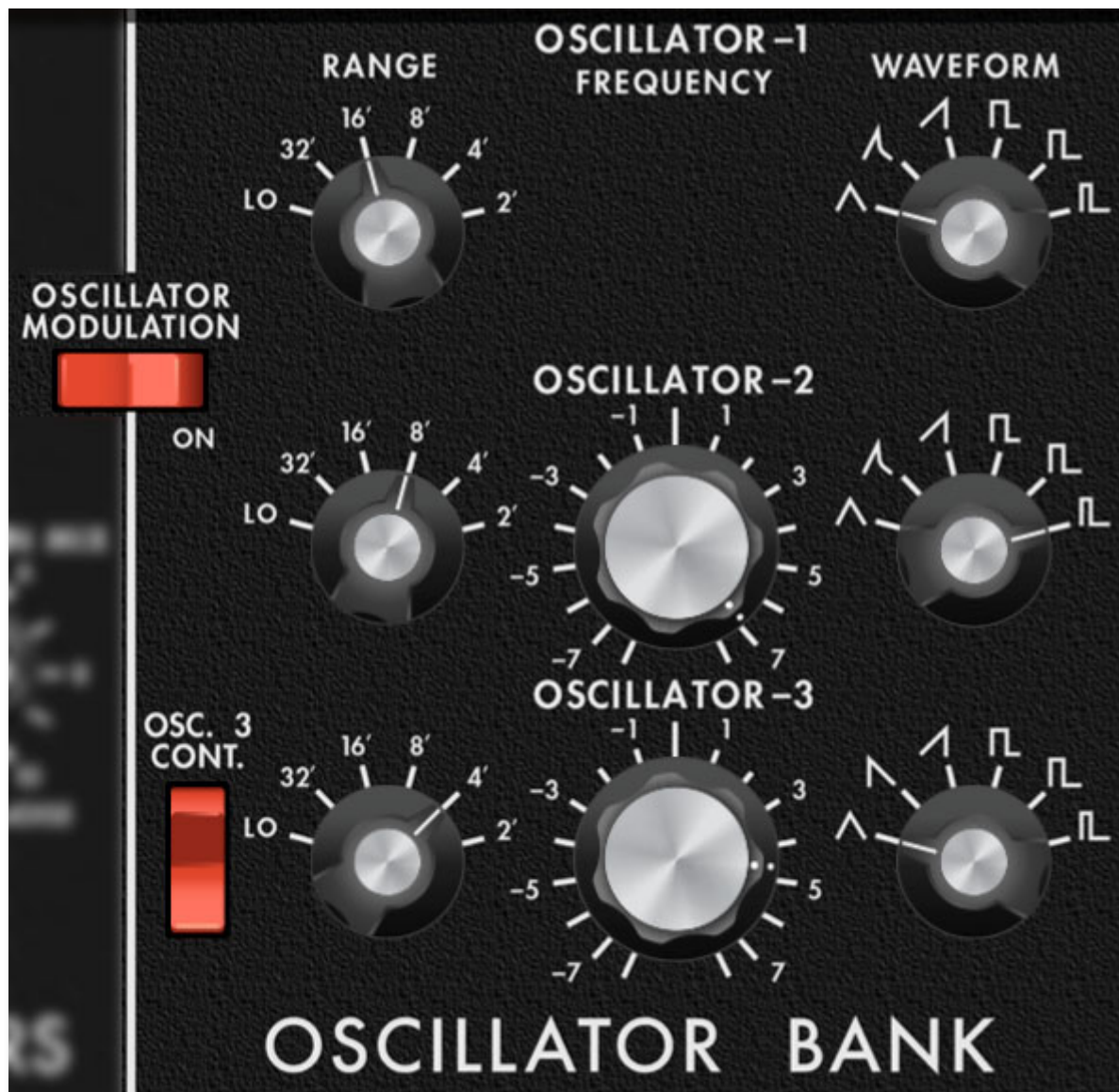
Delete- Deletes the selected preset.

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

Oscillator Bank

Miniverse includes three oscillators which are mostly identical, so we'll go over them once and note the differences.

Range- Sets the coarse pitch range for each oscillator in standard organ footage settings of *Lo*, *32'*, *16'*, *8'*, *4'*, and *2'*. Oscillator–3 *Lo* range is used when it's being used as a modulation source.

Oscillator–1 and Oscillator–2's Lo setting isn't very useful and something of a quirk of the original Mini design. We suspect that Moog didn't want to spring for a five-position switch and/or deal with a different oscillator calibration routine.

Fine Tune (Oscillator–2 and Oscillator-3 only)- This can be used to fatten up two or three oscillator patches by detuning a small amount, or for

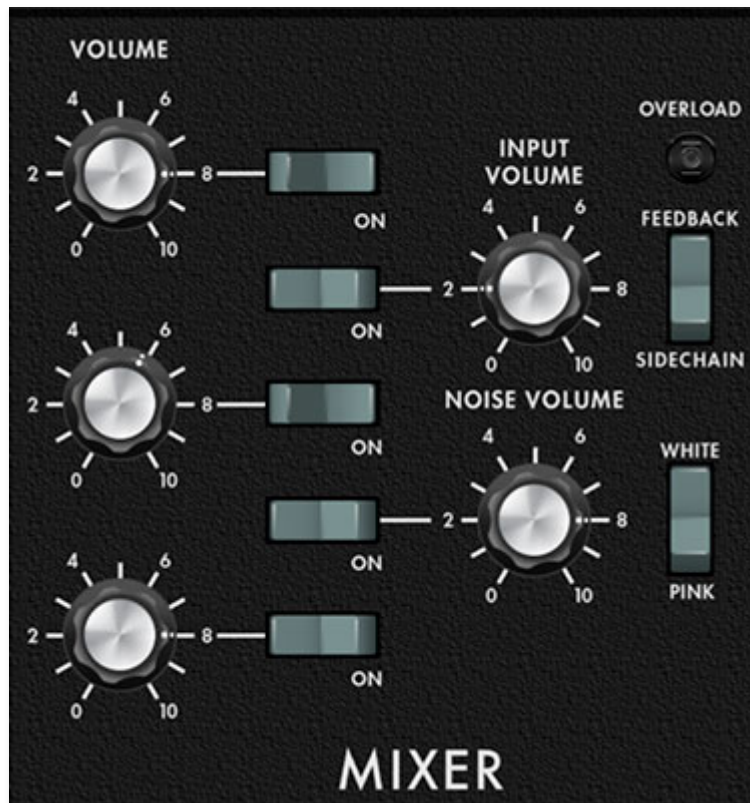"building-in" musical intervals. Its range is a smidge over a fifth, up or down.

Wave Shape- These allow selection of triangle, triangle/saw combo, ramp, square, wide pulse, or narrow pulse. Oscillator–3 swaps out the triangle/saw combo wave for a saw wave (i.e. reverse ramp). This is intended for times when Oscillator–3 is used as a mod source and allows rising or falling modulation.

Oscillator Modulation- Enables Oscillator–1 and Oscillator–2 pitch modulation from Oscillator-3 or the onboard noise source with intensity set by the mod wheel.

Osc. 3 Control- Enables or disables control of Oscillator-3 pitch via the keyboard. The main purpose of this is to allow Oscillator–3's rate (pitch) to remain constant when it's being used a modulation source - otherwise, the mod rate would speed up as higher notes were played on the keyboard.

Because the *Osc. 3 Control* switch disconnects the keyboard, it can also be used to play "drones" (i.e. the same pitch regardless of what note is played on the keyboard). In this case you'd use the *Range* and *Fine-Tune* knobs to set the desired drone pitch.

Mixer Section

Mixes the signal levels of all three oscillators as well as Miniverse's noise source and "external" sidechain or feedback signal.

Oscillator–1/2/3 Volume- Sets the volume level of each oscillator. Note that values over four will gently overdrive, just like the original instrument.

Feedback/Sidechain switch- Selects the source for the mixer *Input Volume* knob.

- **Feedback**- The original instrument included a rear-panel external input jack. This was intended for running signal through the lowpass filter, but players discovered that plugging one of the Mini's audio outputs back into the external input jack could fatten up its sound at low knob settings, or result in all manner of feedback madness at higher knob settings. We've carefully recreated this very cool sound, no cable necessary - simply set the switch to the *Feedback* position and turn up the *Input Volume* knob.

- **Sidechain**- Setting the switch to the *Sidechain* position allows DAW signals to be run through Miniverse's filter and amplifier (i.e. Loudness Contour) sections. You'll need to use your DAW's sidechain menu to select

a source; if you're unfamiliar with how to set this up, please consult your DAW's manual, or ye olde Intergoogle.

Make sure to turn the Loudness Contour Sustain knob all the way up, and hold a key down when feeding external sidechain signals through Miniverse. This opens the VCA and allows signals to pass.
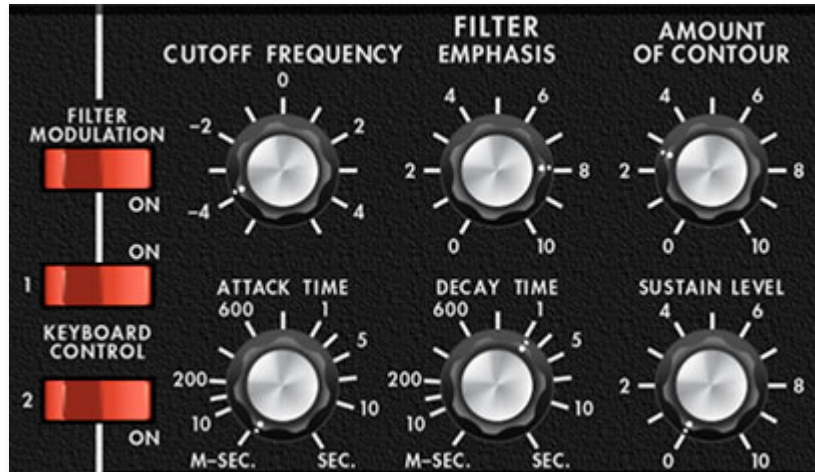
Input Volume / Overload lamp- Sets the volume level of instrument feedback or sidechain signal explained in the preceding section. The *Overload* lamp will glow if the signal level is too hot (but you won't harm anything by cranking it up, except maybe your ears).

Noise Volume - Sets the volume level of white or pink noise.

White / Pink Noise switch- Selects the type of noise created at the Noise Volume control.

- **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 will sound duller to the ear than white noise, and as a control signal, will be less likely to output higher frequencies. Also, a female vocalist with an easygoing, rebellious attitude and a bafflingly long pop music career.

Filter And Filter Contour Section

Miniverse's filter is a superbly accurate recreation of the world-famous 24 db/oct Mini lowpass transistor "ladder" filter. It's renowned for its meaty, fat sound (as well as launching a zillion redundant adjective descriptions!).

Cutoff Frequency- The filter removes high harmonics as its cutoff frequency setting is decreased from max, resulting in a dulling of sound. The Cutoff Frequency knob determines the frequency where attenuation begins.

Emphasis- More commonly referred to as "resonance," this 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. Miniverse's implementation is fully self-oscillating, just like the original - at extreme settings, it can be used as a sine wave generator, but be careful because high resonance settings can result in loud, screamy, dog-terrifying (and speaker blowing) occurrences.

Amount of Contour- Applies a CV from the filter envelope (i.e. envelope generator) to cutoff frequency. This allows familiar auto filter sweeps. When raising the *Amount of Contour* control, you'll generally want to lower the *Cutoff Frequency* control, as these work in conjunction with one another.

Filter Modulation- Enables filter cutoff frequency modulation from Oscillator-3 or the onboard noise source with intensity set by the mod wheel.
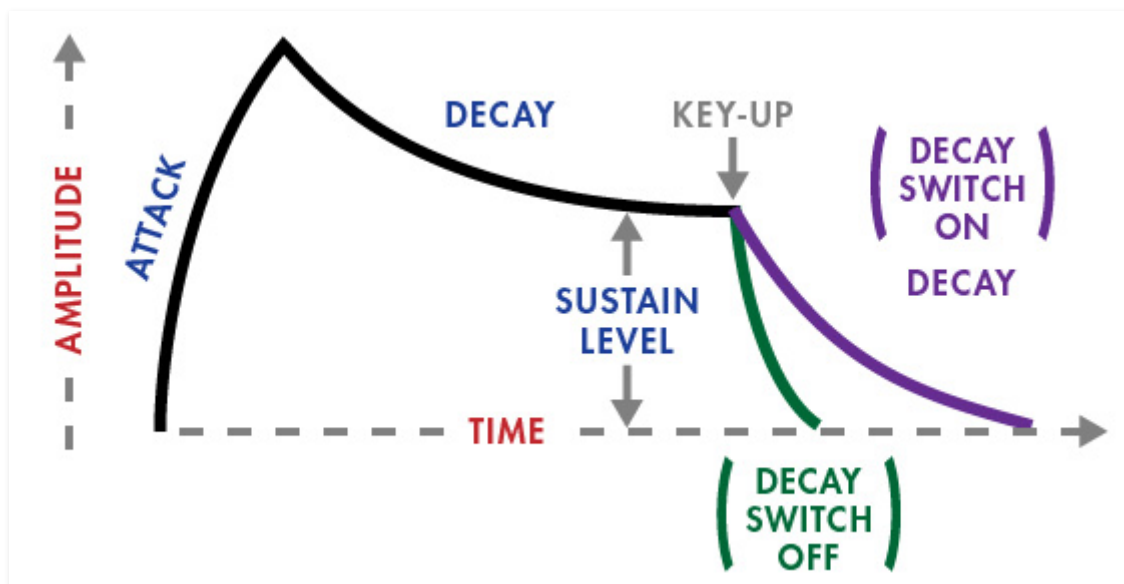
Keyboard Control- This causes the cutoff frequency to increase as ascending notes are played on a keyboard. The idea behind this is, because actual note frequencies rise as higher pitches are played, the *Keyboard*

Control switches adds a rising CV to the cutoff frequency in order to maintain the brightness of notes as higher pitches are played.

- **Both off**- Cutoff frequency stays constant across the keyboard - i.e. no tracking.

- **1/3**- Adds 33% of the total of available cutoff frequency tracking.

- **2/3**- Adds 66% of the total of available cutoff frequency tracking.

- **Both switches on**- Cutoff frequency tracks the same as the keyboard CV voltage - i.e. the cutoff frequency rises one octave for each octave played on the keyboard.

Filter Contour Envelope

The filter section includes a dedicated envelope generator for control of cutoff frequency (via the Amount of *Contour* knob) with its ADS envelope generator. Here's how an ADS envelope generator works:

When Miniverse receives a gate voltage from a keyboard note being played, the contour generator outputs a dynamically changing voltage, according to the settings of its stages. The Attack Time 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, which defines how long it takes to fall from 5V to the setting of the sustain phase.

Unlike Attack and Decay, the Sustain phase is *not* a time-based control - the *Sustain* knob sets a voltage level that's held until the key is released.

Filter Contour Envelope Controls

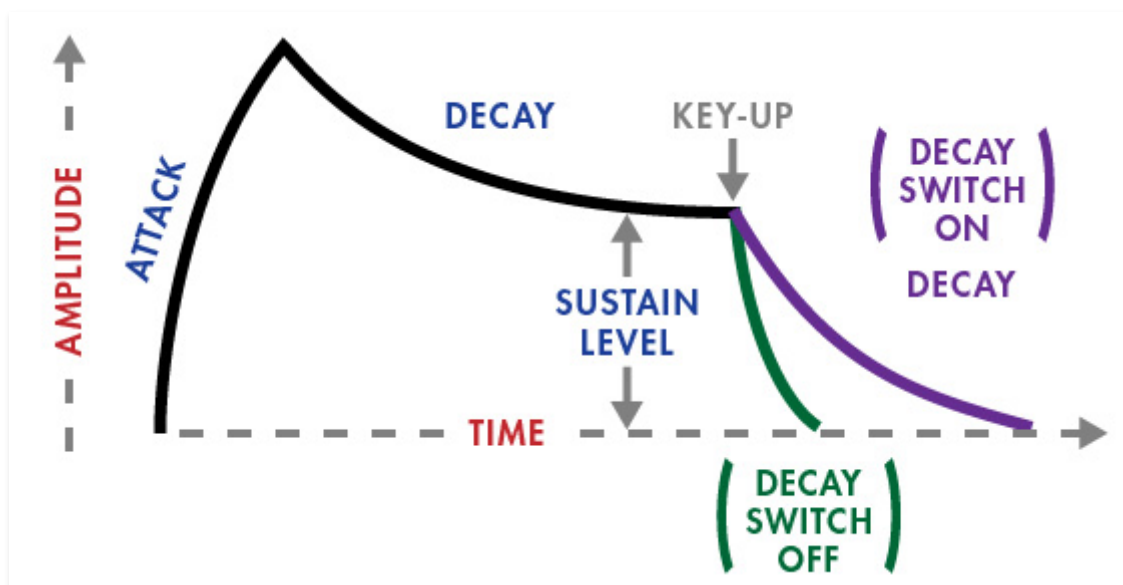**Attack**- Defines the length of time for voltage to rise from 0V to 5V when a key is played.

Decay / Left-hand controls Decay switch- Defines the length of time for voltage to fall from the attack stage 5V peak to sustain stage setting. The *Decay* knob behaves differently depending on the position of the *Decay* switch in the left-hand keyboard controls section. If the *Decay* switch is off, notes will immediately stop sounding when keys are released. If the *Decay* switch is on, the *Decay* knob also defines how long it takes for notes to fade away when a key is released (much like the Release control in a standard ADSR envelope generator.

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

Loudness Contour Section

The Loudness Contour section is an ADS envelope generator/VCA combo used to dynamically shape note volume. If you're not familiar with the operation of ADS envelope generators, here's an overview:

When Miniverse receives a gate voltage from a keyboard note being played, the contour generator outputs a dynamically changing voltage, according to the settings of its stages. The Attack Time 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, which defines how long it takes to fall from 5V to the setting of the sustain phase.

Unlike Attack and Decay, the Sustain phase is *not* a time-based control - the *Sustain* knob sets a voltage level that's held until the key is released.

Filter Contour Envelope Controls

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

Decay Time/ Left-hand controls Decay switch- Defines the length of time for voltage to fall from the attack stage 5V peak to sustain stage setting. The *Decay* knob behaves differently depending on the position of the *Decay* switch in the left-hand keyboard controls section. If the *Decay* switch is off, notes will immediately stop sounding when keys are released. If the *Decay* switch is on, the *Decay* knob also defines how long it takes for notes to fade away when a key is released (much like the Release control in a standard ADSR envelope generator.

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

Output Section

Volume- Sets the master output level.

A-440- A tuning reference that generates a perfectly in-tune A note at 440 Hz. This was far more useful in the original instrument as its oscillators had a tendency to drift all over the place. Since Miniverse is a modern computer-based instrument, tuning drift isn't an issue, but we included the *A-440* switch for authenticity.

(In actuality, Miniverse's oscillators do drift a bit, but that was intentional on our part, and it isn't enough to cause tuning issues.)

Number of Voices- Sets the overall number of polyphonic notes that can be played simultaneously. When set to the *1* position, Miniverse behaves exactly like the original instrument - it will only play one note at a time, and the lowest currently held note will always have priority. At any of the other poly settings, Miniverse will play with last-note priority, that is, the most recently played note always takes priority, and notes will be "stolen" if the current *Number of Voices* setting is exceeded.

Limiter- As seen in other Cherry Instruments, the *Limiter* switch applies a transparent limiting effect to help prevent overloading. This is particularly useful with high *Number of Voices* settings, or if you're really cranking the

mixer controls. And we really needed an excuse to include the cool-looking red neon lamp art and rocker switch where the power switch lives on the original.

Controllers and Left-Hand Controls Sections

Here we'll cover the front-panel Controllers sections as well as the controllers to the left of the keyboard.

Controllers Section

Tune- Sets master tuning for the entire instrument. The tuning range is 2 1/2 semitones up or down.
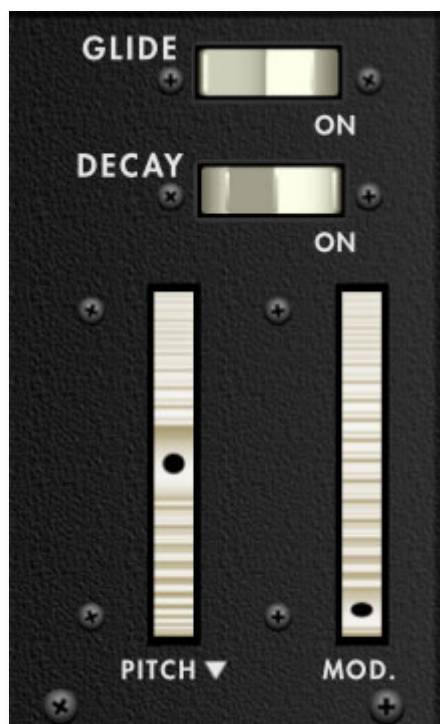
Glide- The *Glide* knob causes notes to slide smoothly from one pitch to the next. Higher settings result in a slower change of pitch.

Modulation Mix- This affects the modulation source when the *Oscillator Modulation* and/or *Filter Modulation* switches are active (and the mod wheel is up). When the knob is fully counterclockwise, modulation comes from Oscillator–3; when the knob is fully clockwise, modulation comes from the onboard noise source. Any position in between creates a mix of both Oscillator–3 and the noise source.

On an interesting side note - like the original, the noise mod source isn't pink or white noise. It's actually red noise, aka, Brownian noise (named for Robert

Brown, who discovered it). Brown noise contains more low-frequency content than pink or white noise, and apparently Moog felt it made for a better mod source.

Left-Hand Controllers Section

Glide enable- Enables and disables *Glide* described in the previous section.

Decay enable- Enables and disables decay after notes are released (see **Loudness Contour Section** for more details on how the envelope generator works).

Pitch Wheel- Standard pitch bender with a range of eight half-steps up or down, like the original instrument. The pitch wheel can be moved onscreen or with a MIDI/USB pitch bend wheel or joystick.

Pitch Bend Depth triangle- This is real easy to miss - next to the *Pitch* panel label is a wee inverted triangle. Clicking on this opens a popup menu where pitch bend range can be set from 1 to 24 semitones.

Mod. Wheel- The mod wheel works in conjunction with the *Oscillator Modulation* and *Filter Modulation* switches. When either or both are on, modulation is applied to oscillator pitch and filter cutoff, with the mod source set using the *Modulation Mix* knob described in the previous section. The mod wheel can be moved onscreen or with a MIDI/USB mod wheel or joystick.
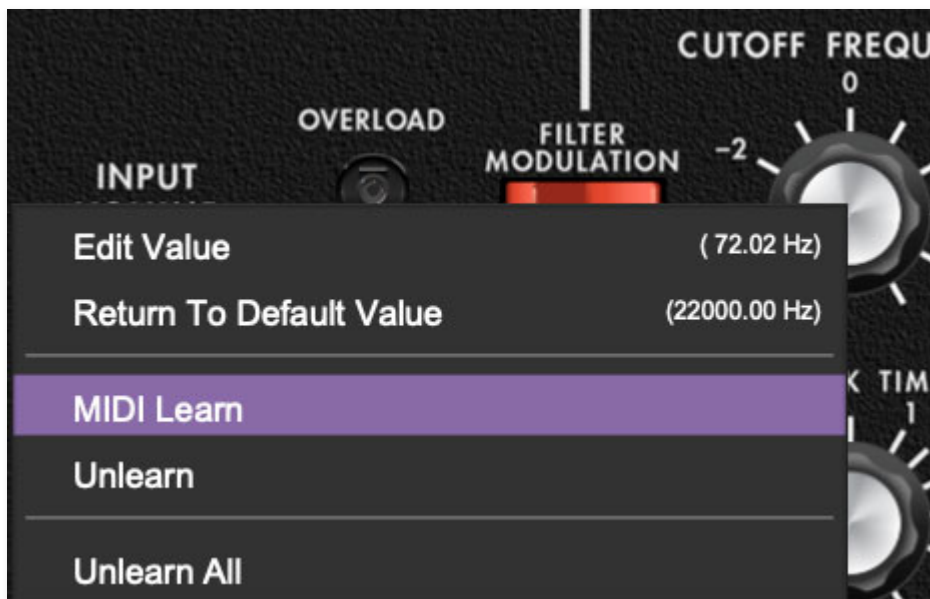
MIDI Controllers Setup and the MIDI Tab

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 Miniverse 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 Miniverse's swift MIDI control assignments.

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

Begin by right-clicking on the *Cutoff Frequency* knob 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 knob. 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 Miniverse control.
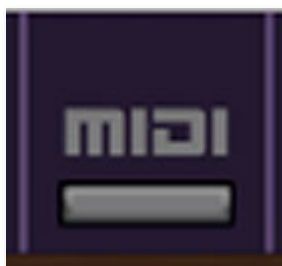

When in MIDI learn mode, any previously assigned controller numbers will show in squares. These indicate the MIDI continuous controller number of the assigned hardware control (these are also displayed in the *MIDI* library tab at left).

Once a MIDI controller has been assigned, in addition to real-time control of a Miniverse 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 Minimode 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 in Miniverse:

- **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 1979 Neil Diamond 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 at as button controls for Miniverse'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* 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 changed 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.
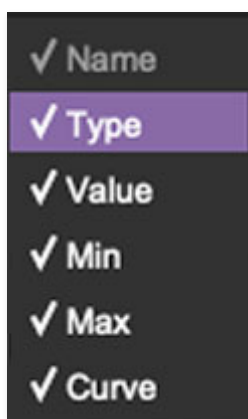
Max - Sets a limit on the highest value any automation control can set a mapped controller to. This actually recalibrates the range of the automation controller to the remaining parameter range.

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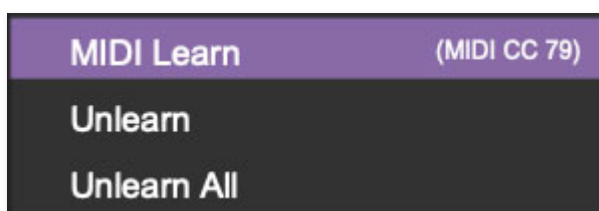
Curve - These allow the customization of how incoming MIDI CC controls affect the movement of Miniverse's onscreen controls, ranging from exponential to linear to logarithmic curves.

MIDI Tab Column Configuration Right-Click Menus

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.
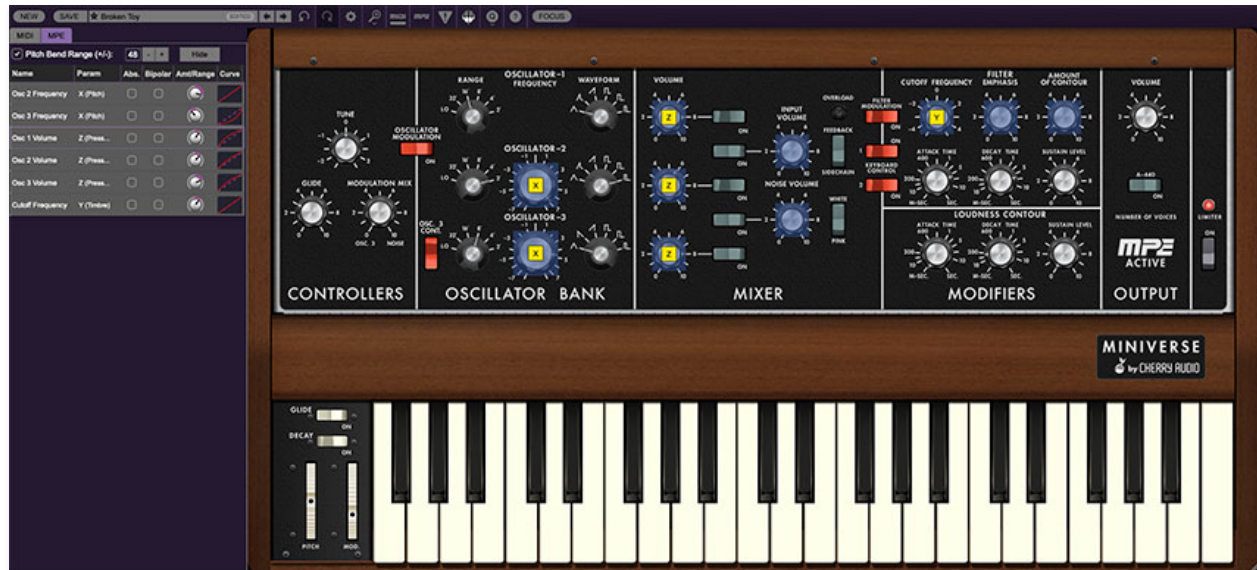
MIDI Tab Parameters Right-Click

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

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

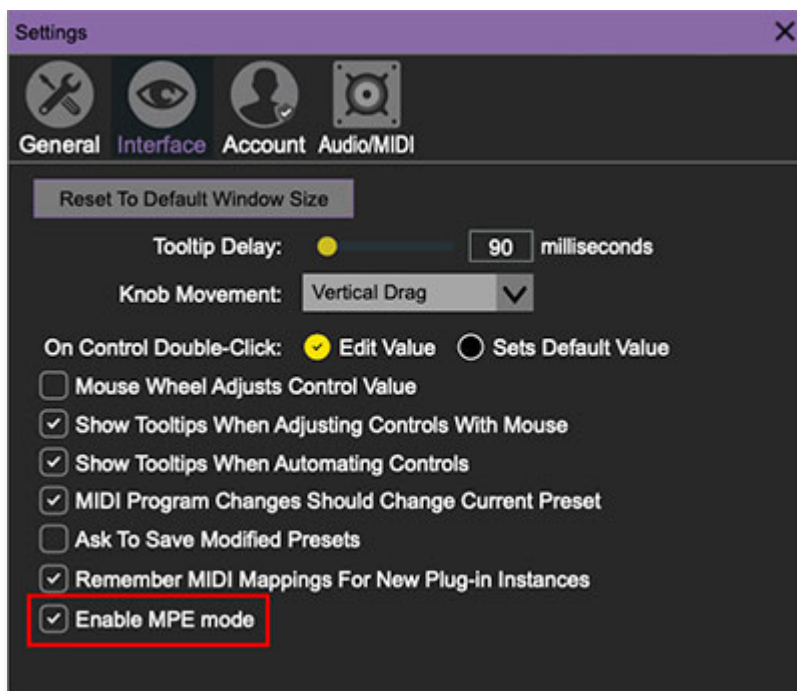**Unlearn** - Deletes the selected automation parameter.

Unlearn All- Deletes all controller assignments for the patch. Miniverse will display a warning dialog prior to deletion in order to thwart potential unlearn-related disasters.

Using MIDI Polyphonic Expression (MPE)

Miniverse supports MPE, short for "MIDI Polyphonic Expression." It's a specialized MIDI protocol enabling multidimensional controllers for controlling multiple parameters of individual notes. MPE specifies the MIDI messages used for three dimensions of control, regardless of how a particular controller physically expresses them. MIDI channel 1 is used as a master channel for global pitch bend, aftertouch, etc.; MPE utilizes MIDI channels 2-15 for the remaining controller data.

To enable MPE mode, MPE needs to be be enabled in the *Settings* menu. Click the *Settings* gear icon in the top purple toolbar, then the *Interface* tab, then check the *Enable MPE mode* box. Exit out of the *Settings* window and click the *MPE* icon in the top tool bar.
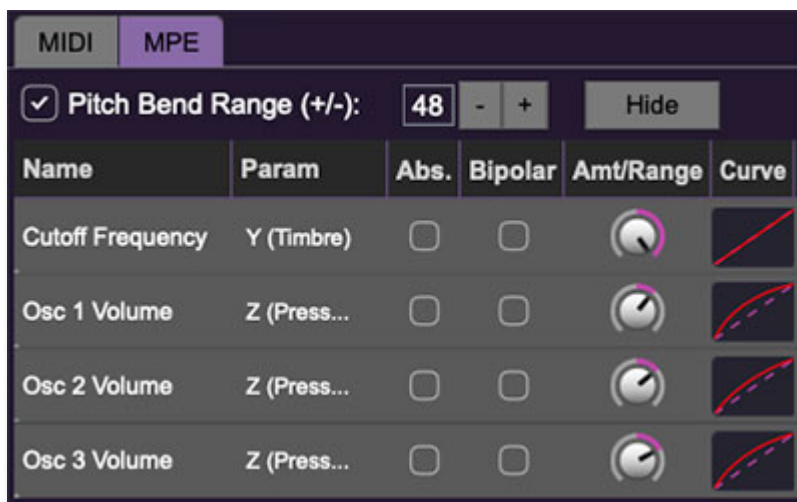
Miniverse displays this fanciful graphic in place of the *Number of Voices* knob when MPE is enabled:
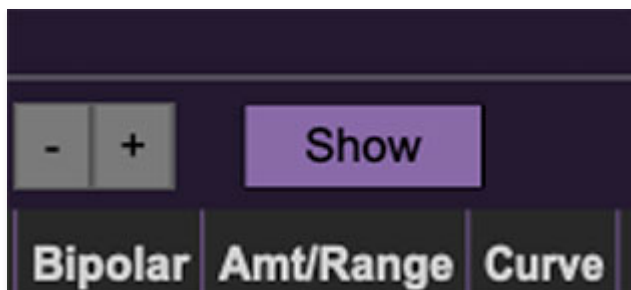

Do not enable MPE mode if you're not using an appropriate MPE controller. Miniverse will *not* play correctly with a standard USB MIDI controller in MPE mode. And your toenails will spontaneously combust (<–we made that one up).
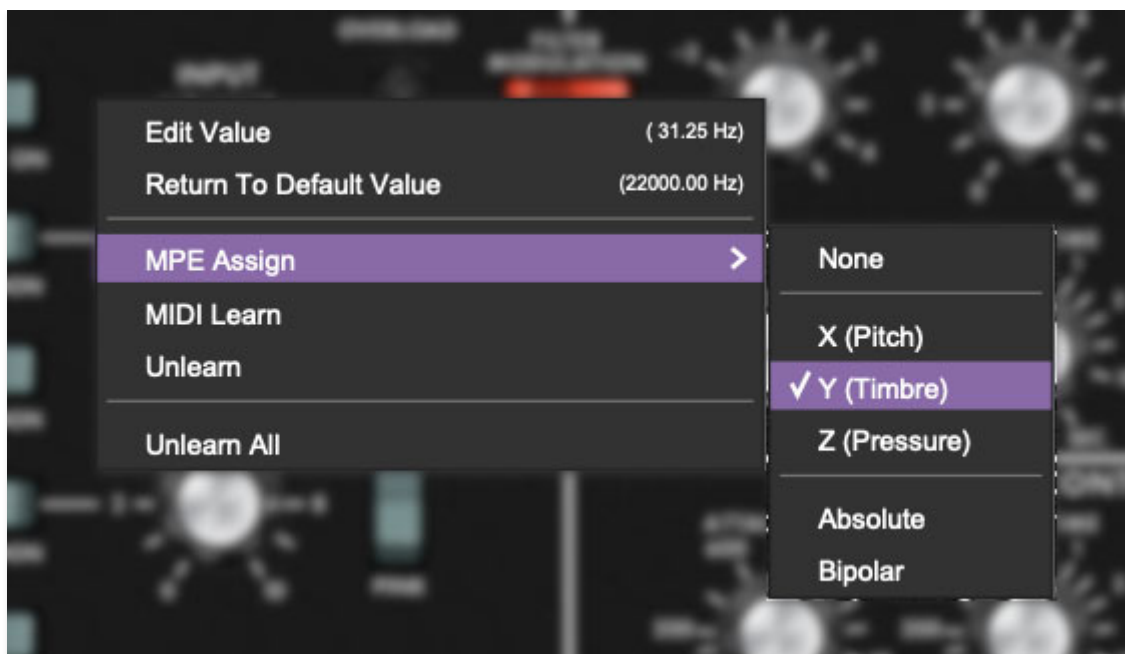
MPE Control Tab

Pitch Bend check box and Range controls- At the top of the tab is a checkbox which enables pitch bend; to its right is the pitch bend range control. Its default setting is 48 semitones (four octaves). For best results you'll need to match this number with your MPE controller's pitch bend setting (most MPE controllers default to 48 semitones).

IMPORTANT: If MPE mode is enabled, you must use a MPE controller set to "Lower Mode" to achieve full MIDI control. If you're using a non-MPE MIDI Controller, or the QWERTY Musical Typing keyboard, only one mono voice will trigger.

Show/Hide Button - Clicking the *Show* button in the MPE panel highlights all of the available MPE mappable knobs with blue overlays. Click the *Hide* button to hide them.

To map a control slider, right-click or [OPTION]+click (Windows) / [⌘]+click (Mac) the slider you wish to map. This reveals the controller mapping menu. Select *MPE Assign*.
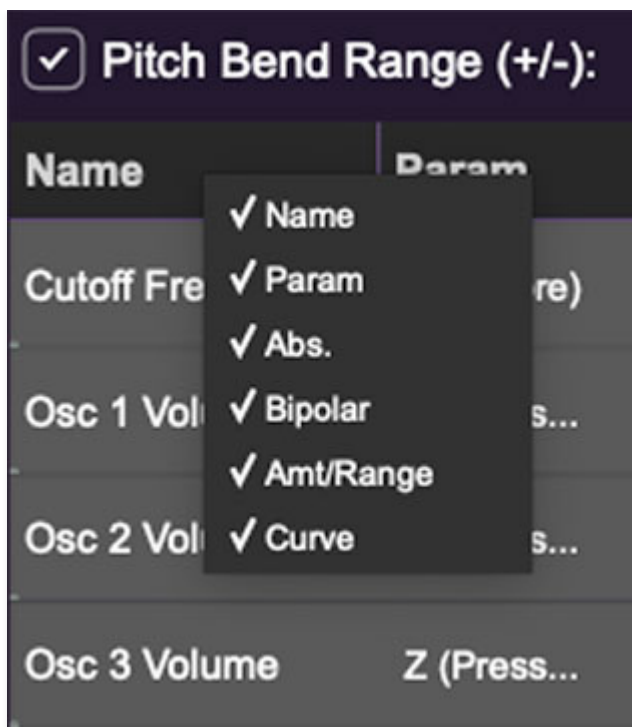
Options are:
X (Pitch)
Y (Timbre)
Z (Pressure)

Note: Some MPE controllers such as the Roli Seaboard may have as many as five dimensions of expression. Miniverse utilizes the three standard dimensions: *Pitch*, *Channel Pressure*, and *Timbre*. Also, not all MPE controllers are equipped with a master/global pitch bender.

Once mapped, the *Name* and *Parameter* will be visible in the MPE tab. A yellow square indicator (X,Y,Z) also appears atop each of the mapped knob controls.

MPE Tab Columns

Right-clicking any of the column headers opens a popup menu allowing each header to be shown or hidden.

Name- Displays the name of the parameter being controlled.

Parameter- Displays and allows selection of the three controller types: *X (Pitch), Y (Timbre),* and *Z (Pressure).*
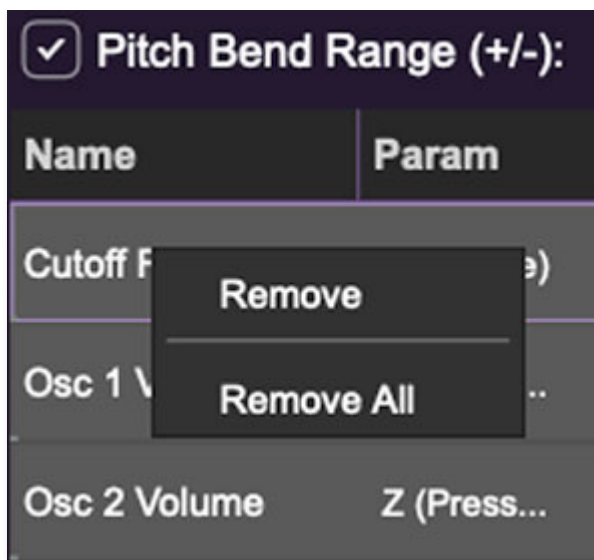
Absolute- Sets the *Amt/Range* of the controller to absolute or relative control.

Bipolar- Enables bipolar controller, i.e. the ability to add and subtract the parameter amount, as opposed to positive only.

Amount/Range- Sets the intensity of control range. If set to *Absolute* mode, two knobs appear for min/max settings.

Curve- These allow the customization of how controller data affect the movement of Miniverse onscreen controls, ranging from exponential to linear to logarithmic curves. Click and drag on the red line and pull up or down to adjust the curve.

MPE Tab Parameters Right-Click

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

Remove- Deletes the selected MPE controller parameter.

Remove All- Deletes all MPE controller assignments for the patch. Miniverse displays a warning dialog prior to deletion in order to thwart potential disasters.

MPE Mappable Parameters

Below are all mappable Miniverse MPE parameters. **Only polyphonic parameters (i.e. parameters that independently affect individual notes) can be mapped with MPE.**

SECTION	PARAMETER
OSCILLATOR BANK	OSCILLATOR 2 FREQUENCY
OSCILLATOR BANK	OSCILLATOR 3 FREQUENCY
MIXER	OSCILLATOR 1 VOLUME
MIXER	FEEDBACK/SIDECHAIN INPUT VOLUME
MIXER	OSCILLATOR 2 VOLUME
MIXER	NOISE VOLUME
MIXER	OSCILLATOR 3 VOLUME
FILTER	CUTOFF FREQUENCY
FILTER	EMPHASIS
FILTER	AMOUNT OF CONTOUR

Popular MPE Controller Devices

Following is a list of popular MPE controllers as of 2022. We're sure your Sweetwater rep is just dying to sell you one (and follow up with 47 phone calls: "Hi, this is Channing! How are those foam studio monitor isolation feet workin' out for ya?")
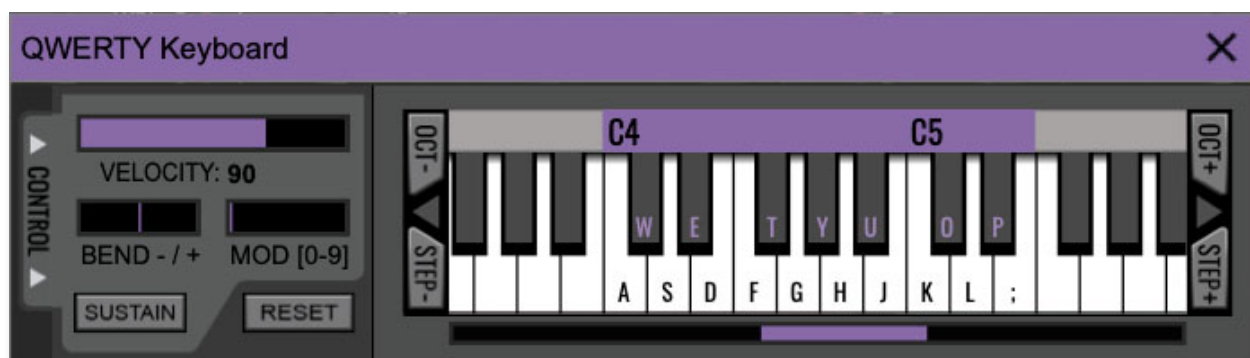
Roli - Seaboard
Sensel - Morph
Expressive E - Osmose
Keith McMillen Instruments - K-Board Pro 4, QuNexus Red
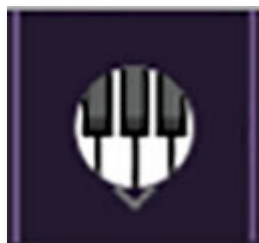*Haken Audio* - Continuum Fingerboard
Roger Linn Designs - Linnstrument
Artiphon - Instrument 1

Miniverse can be played by clicking its onscreen keyboard with a mouse or trackpad, but if you don't have a MIDI keyboard attached to your computer, there's a better way - your computer's QWERTY computer keyboard can be used to play notes. We call this the "musical typing keyboard," or "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, 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 Miniverse 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. The bend range is a nine half-steps (like a real Mini, give or take). 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.
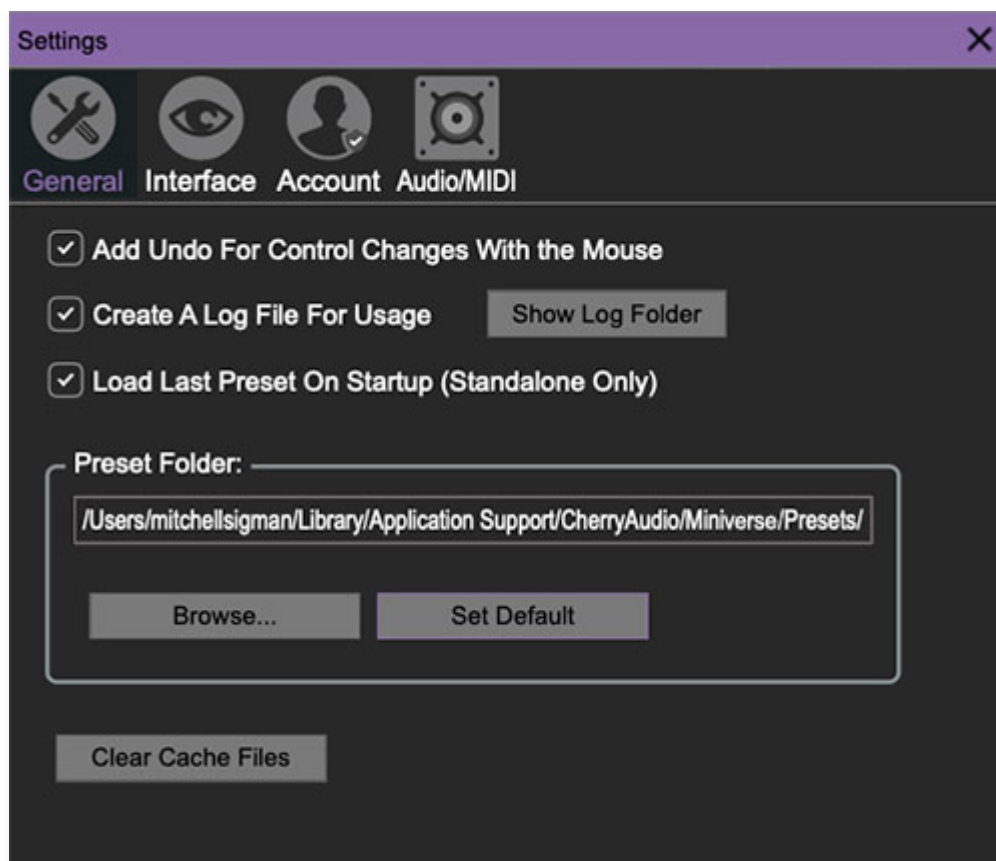
Sustain- The *Sustain* button mimics the functionality of a standard sustain pedal. Click the [TAB] key to engage sustain, or [SHIFT]+[TAB] to lock it. The *Sustain* button can also be engaged by mouse clicking it.

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!
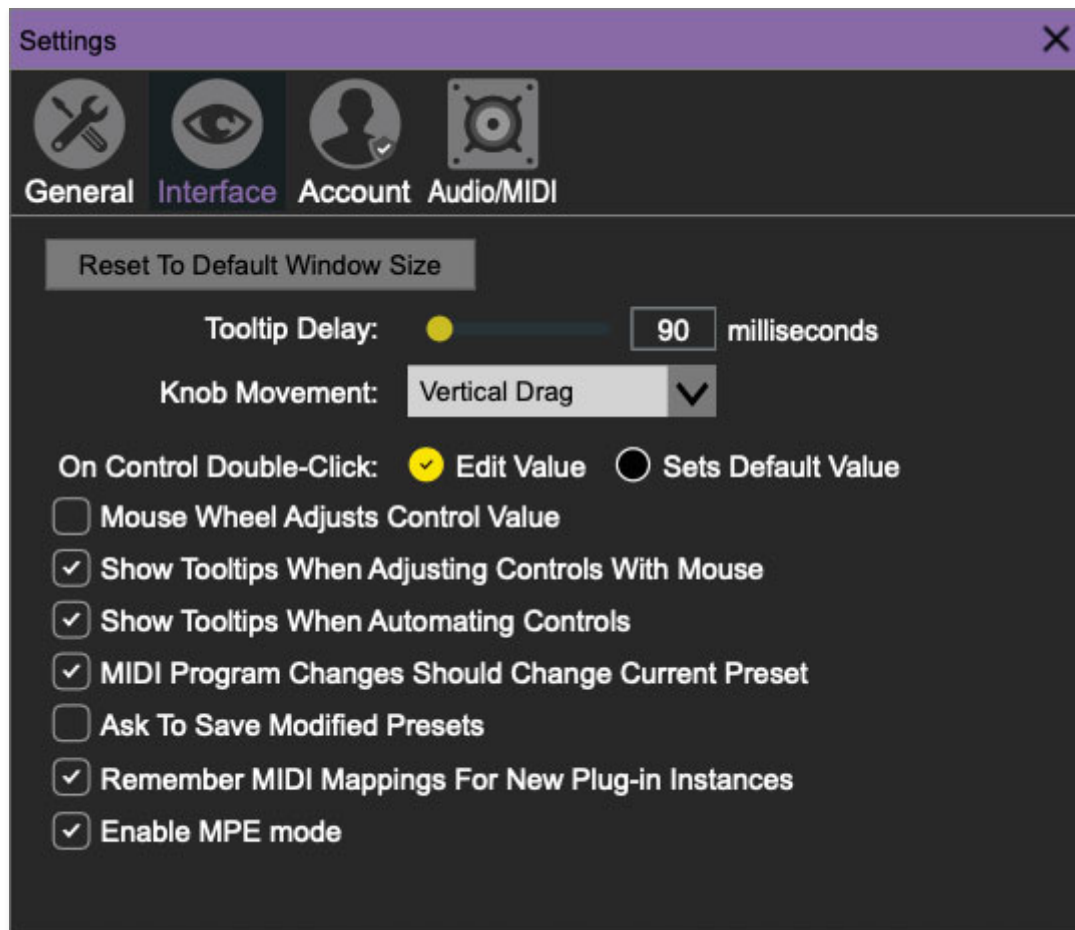
General

- **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 of Miniverse'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 Miniverse log file docs.

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

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

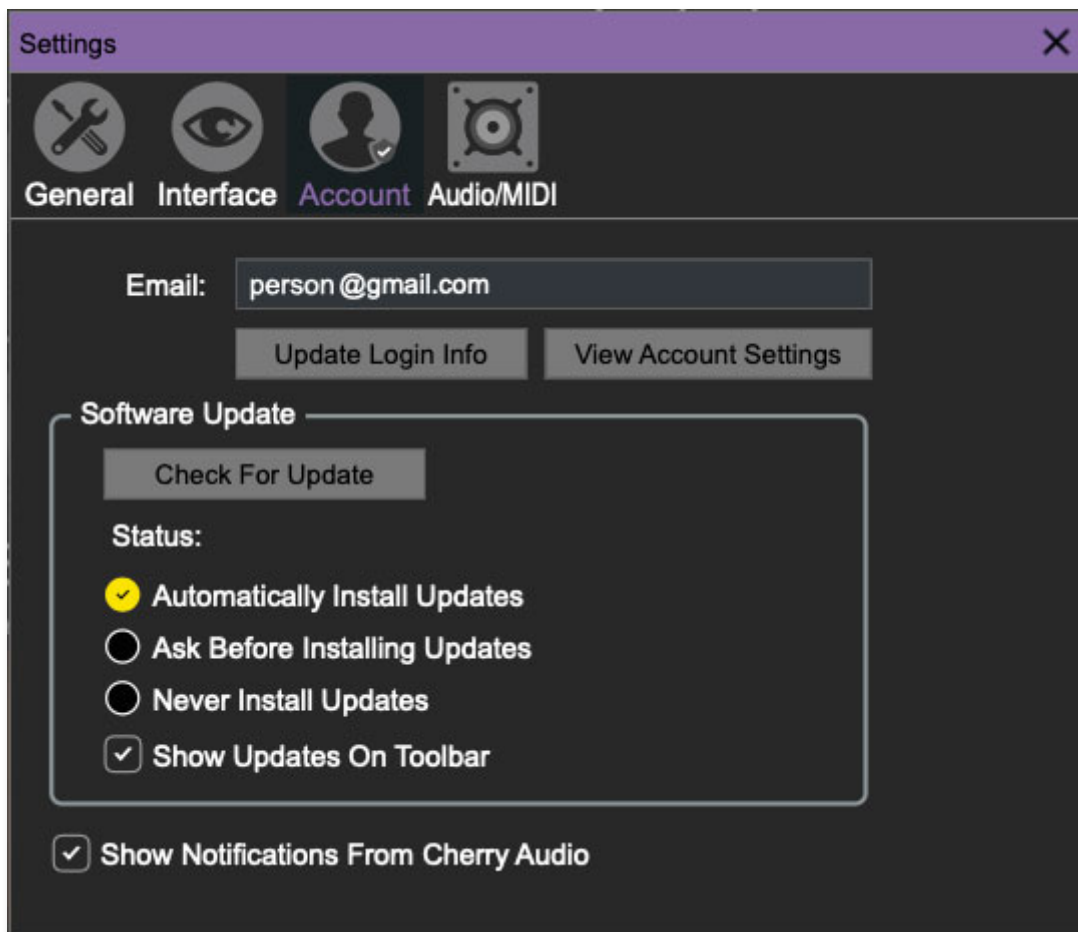Allows customization of Miniverse's user interface settings.

- **Reset To Default Window Size-** Resets the Miniverse 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 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 Miniverse 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, Miniverse remembers all global MIDI Tab controller settings.

- **Enable MPE mode**- Allows Miniverse to properly receive MIDI control data from MPE controllers. MPE is short for "MIDI Polyphonic Expression." It's a specialized MIDI protocol enabling multidimensional controllers for controlling multiple parameters of individual notes, and it requires a special type of MIDI/USB controller.

Do not use enable MPE mode if you don't have a proper MPE controller, because Miniverse will not operate properly.

Check out the **Using MIDI Polyphonic Expression (MPE)** section for more information..

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 Miniverse.

- **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 Miniverse handles updates.

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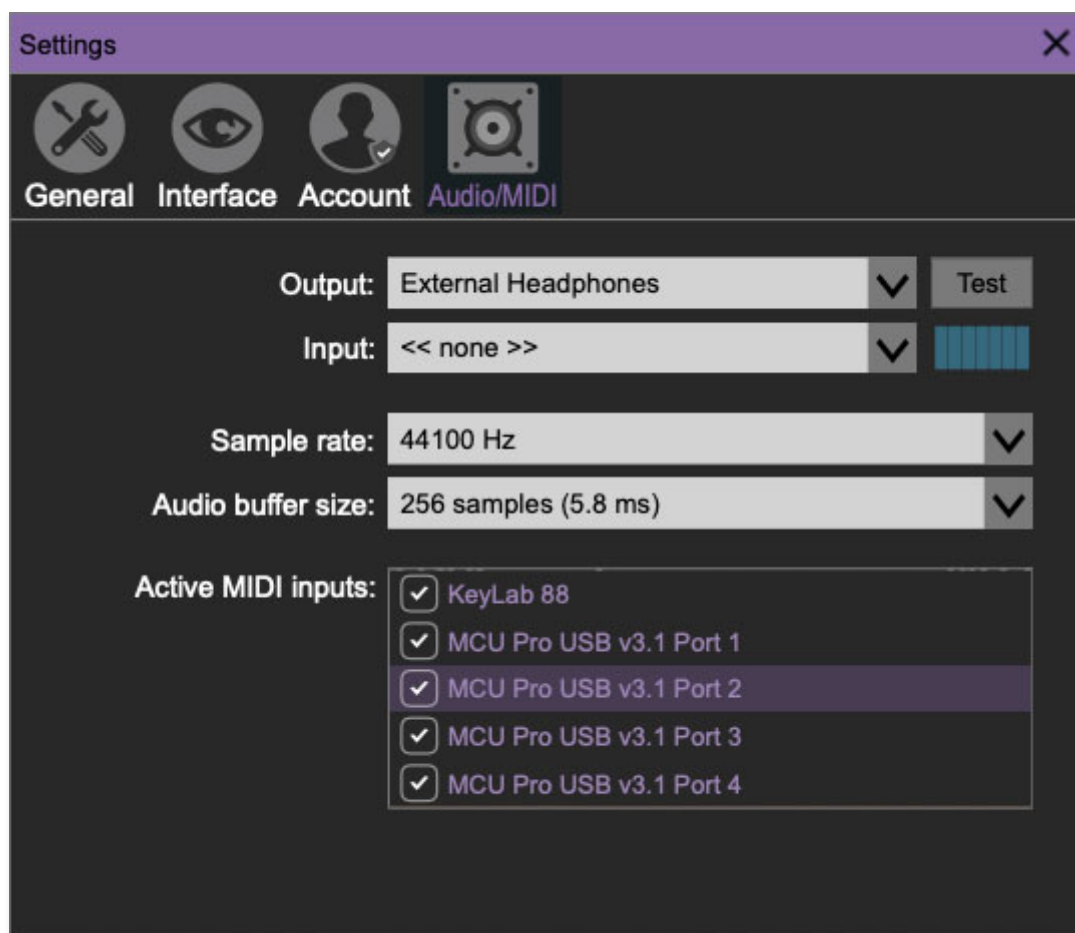
Status-

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

- **Ask Before Installing Updates**- By default, Miniverse 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 Miniverse for live performances or other "mission critical" situations.

- **Never Install Updates**- Miniverse 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

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 of Miniverse.

- **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). These are especially useful if you're using Miniverse external inputs to process sound. 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?!?"

- **Input**- Clicking the drop-down menu lets you select which physical input feeds the sidechain input. (More info about this in the *Feedback/Sidechain switch* section in the **Mixer** chapter). The small horizontal input meter to the right illuminates when the selected input is receiving an audio signal.

- **Sample Rate-** This sets Miniverse'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 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.)