

Loomer Manifold User Manual

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Requirements

macOS Requirements

- Requires macOS v. 10.7 or later, or macOS 11
- x86 based processor 1.0Ghz, or above, with SSE, or M1 with Rosetta 2
- 512 MB RAM

Windows Requirements

- Windows Vista or above
- x86 based processor 1.0Ghz, or above, with SSE
- 512 MB RAM

Linux Requirements

- x86 32-bit or or 64-bit based processor 1.0Ghz, or above, with SSE
- 512 MB RAM

The following shared object libraries are required:

- libfreetype
- libasound
- libXinerama

Manifold Overview

What is Manifold?

Manifold is a software audio effect processor that enhances an audio signal, producing a fuller, livelier, bigger sound. Input signals are split into as many as 20 individual voices, each of which are detuned, placed around the stereo panorama, and recombined with stunning results. Flexible controls mean Manifold is capable of producing a wide range of effects; from subtle modulations that add interest to lifeless sounds, to extreme detuning that fattens the weakest of input sources.

A pair of highpass and lowpass filters mold the sound further, allowing only specific frequency ranges to be processed. Flexible panning allows the effect to produce sounds that can be tightly focussed in the centre of the stereo image, spread between the extreme stereo edges, or anywhere in-between.

With optimised audio algorithms that won't overload your processor, rock-solid stability, and easy integration with any MIDI hardware controller, Manifold is ideal for live work. With a simple and intuitive interface, flexible bank and program management, and total parameter automation, Manifold fits right into your studio environment.

Plug-in vs Standalone

Depending upon your individual studio setup, Manifold can either be used as a plug-in component of a compatible host application, or as a standalone application requiring no other dependencies. Generally, by using the host application's routing flexibility, running as a plug-in allows easier integration with existing plug-in effects and instruments. If this integration is not required, the standalone version, without the burden of the host, performs very slightly better.

Presets and MIDI mapping assignments are identical in both standalone and plug-in versions. This means any sounds created in one format can be opened in the other.

Manifold Formats

For macOS, the following formats are provided:

- Standalone application (64-bit)
- Audio Unit (AU) plug-in (32-bit and 64-bit)
- VST2 plug-in (32-bit and 64-bit)
- VST3 plug-in (64-bit)
- AAX plug-in (64-bit)

These formats are available for Windows PC:

- Standalone application (64-bit)
- VST2 plug-in (32-bit and 64-bit)
- VST3 plug-in (64-bit)
- AAX plug-in (64-bit)

These formats are available natively for Linux:

- Standalone application (32-bit and 64-bit)
- VST2 plug-in (32-bit and 64-bit)

Supported Channel Configurations

For maximum flexibility, Manifold can be used in one of several possible input and output channel configurations. Manifold is a true stereo effect: left and right channel separation is preserved. The following configurations are possible:

- mono to mono (1 input, 1 output)
- mono to stereo (1 input, 2 outputs)
- stereo to stereo (2 inputs, 2 outputs)

Note that some host applications may not support one or more of these configurations; consult your host's documentation for further details.

Installation and Registration

macOS Installation

1. Start the installation process by double-clicking the Manifold installer application.
2. Read the introduction screen dialog text. Press *Continue* when you are ready to proceed.
3. Read the licence agreement. Click *Continue*, then *Agree* to confirm you have read and agreed to the licence terms.
4. Select a destination volume into which to install Manifold, and then click *Continue*.
5. From the list of installable components, uncheck any formats that you do not wish to install. Click *Continue* to proceed.
6. To complete the installation, press *Install*.

The components are, by default, installed into the following directories:

- VST2 plug-in into */Library/Audio/Plug-Ins/VST*
- VST3 plug-in into */Library/Audio/Plug-Ins/VST3*
- Audio Unit plug-in into */Library/Audio/Plug-Ins/Components*
- AAX plug-in into */Library/Application Support/Avid/Audio/Plug-Ins*
- Standalone application into */Applications*
- Documentation into */Library/Documentation/Loomer*

Windows Installation

1. Start the installation process by double-clicking the Manifold installer application.
2. Read the welcome screen dialog text. Press *Next* when you are ready to continue.
3. Read the licence agreement. Click *I Agree* to confirm that you have read and agreed to it.
4. From the list of installable components, uncheck any formats that you do not wish to install. Click *Next* to continue.
5. If you have chosen to include the VST plug-in format, select the directory into which it will install. Click *Next* to continue.
6. Select a directory into which the common files will install. The user documentation and the Standalone application (if selected in the the list of components), will be placed in this location. To complete the installation, press *Install*.

Unless any other directories are selected during the installation, the components are installed into the following directories:

- VST2 plug-in into the VST plug-ins folder, which is, unless configured otherwise, *C:\Program Files\Steinberg\VSTPlugins*
- VST3 plug-in into the VST3 plug-ins folder *C:\Program Files\Common\VST3*
- AAX plug-in into *C:\Program Files\Common Files\Avid\Audio\Plug-Ins*
- Standalone application, documentation and default Bank into *C:\Program Files\Loomer\Manifold*.

Linux Installation

Manifold for Linux is distributed as a standard Linux tarball. To install, extract the package using any unarchiving utility; the following command-line invocation will suffice:

```
tar xzvf Manifold.tar.gz
```

If you have a Linux VST host and have configured your VST Path, the VST plug-in can be moved into the required directory with the following commands:

```
cd Manifold
mv ManifoldVST.so $VST_PATH
```

Without the VST Path configured, you will need to ensure that your host uses the Manifold directory when searching for VSTs; consult your host's documentation for information on how to do this.

Manifold requires the following shared object libraries to be installed:

- libfreetype
- libasound
- libXinerama

Without these libraries installed, the application will not launch. Install the libraries using your distribution's particular package management system, such as apt-get; consult your Linux distribution documentation for more information.

Product Registration

Having installed Manifold, it will run in evaluation mode with the following limitations:

- User created presets can be saved, but not loaded.
- Output will be periodically interrupted, approximately every minute, by a short moment of silence.

These limitations can be removed by purchasing a licence and registering your licence information into the product. Note that registering Manifold on a particular machine will remove the evaluation limitations for all Manifold plug-in formats installed on this machine;

you don't need to individually register all plug-in formats. Licence information will be in the form of a user name and licence key.

To purchase a Manifold licence:

1. Launch Manifold. This can be either the standalone application, or as a plug-in.
2. From the *options* menu (the cog button on the top-right of the interface), choose *Purchase Manifold Licence*. This will launch the shop website, from where a Manifold licence can be purchased by clicking *Add To Cart*, followed by *Checkout*. Follow the on-screen prompts to enter your payment details and make a secure purchase.
3. Once you have purchased Manifold, you will receive your licence key information via email. It is important to keep this information safe because you will require the licence key if you ever need to reinstall and re-register Manifold. If you have lost your licence details, please [contact us](#). Licence keys are sent immediately upon purchase: if you haven't received yours within minutes of a purchase, either check your spam folder or [contact us](#).

To register your copy of Manifold:

1. Choose *Enter Manifold Licence* from the *options* menu.
2. Enter your name in the *Name* field. This must match exactly the name that was used to purchase your Manifold licence, including capitalization of letters.
3. Enter your licence key in the *Licence Key* field. This must match exactly the licence that you received when you purchased Manifold, including any hyphens. We recommend using *copy* and *paste* to ensure that the licence key is entered exactly as specified in your registration email.
4. Press *OK* to confirm that your name and corresponding licence key have been entered. You will be informed that the application must be restarted in order for registration changes to take effect. If you are currently running the standalone application, close and relaunch it. If Manifold is currently running as a plug-in, remove it from the host and add a new instance of it.
5. Manifold should now be registered. If the label on the bottom of the interface still reads Unregistered Evaluation, you must have entered the licence information incorrectly. Go back to step 1, paying careful attention that the name and licence key entered match exactly the licence information in the registration email.

If you are having problems registering your installation of Manifold, please consult the detailed step-by-step instructions at www.loomer.co.uk/support.htm.

Using Manifold

Manifold can be used as either an insert or send effect. When used as an insert effect, Manifold is placed directly in a host's audio channel. As a send effect, Manifold is placed in a host's auxiliary or bus channel, and a portion of the original signal is fed into the effect. Consult your host's documentation to find out how to add a plug-in as either an insert or as a send effect.

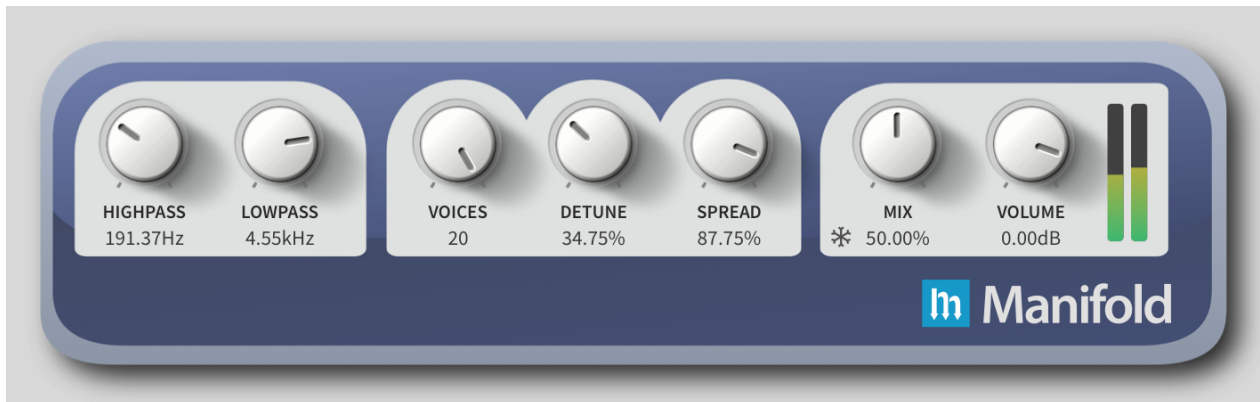


Figure 1: Manifold's Interface

Parameters

- Using the *HIGHPASS* parameter, the volume of low frequency content present in the signal can be changed. More low frequency content is removed as the highpass value increases.
- The *LOWPASS* parameter functions similarly to the highpass, but instead removes high frequencies. A greater amount of high frequency content is removed as the lowpass value decreases.
- The *VOICES* parameter controls the number of individual voices into which the audio is divided. Either 4, 8, 12, 16, or 20 voices can be selected. Using more voices produces a thicker sound.
- Fatten the sound by using the *DETUNE* parameter, which controls the detuning of each voice. At low values, the voices are subtly detuned which produces gentle

chorusing. At higher values, the detuning becomes more noticeable and individual voices more defined.

- The *STEREO* parameter controls the wideness of the detuned signal: at 0%, the stereo image is compacted and all panning information removed; at 50%, the signals original stereo image is preserved; beyond 50%, the stereo signal is enhanced and widened. This parameter has no effect when Manifold is used as a mono effect.
- The *MIX* controls the relative volumes of the original (dry) and processed (wet) signal. At 0%, only the dry signal is present; at 100% only the wet signal will be heard. At 50%, the dry and wet signals will be heard in equal amounts. A 100% wet signal is useful when Manifold is being used as send/return effect and you don't want any of the original signal to be heard.
- The *freeze* button locks the *MIX* control to its current value, even when changing presets. This is useful when you are using Resound as a send effect (and so never want any unprocessed signal in the output) and are browsing presets which may have been saved with various values for *MIX*.
- The *VOLUME* parameter governs the overall loudness of the effect. A meter provides a visual cue to the current level: the louder the output, the higher the meter will register. Too loud of an output will produce digital clipping, a usually undesirable form of distortion. When this occurs, the meter will display a red warning indicator. Click the meter to reset the warning display.

Control Types

Rotary Controls

Click on a rotary control and drag either upwards to increase the value, or downwards to decrease it. Hold down *SHIFT* and drag to make smaller and more precise changes. Hold down *CMD* (on macOS) or *CTRL* (on Windows or Linux) and click to return the control to its default value. Double-clicking a control will also return it to its default.

Rotary controls can also be changed by hovering the mouse cursor over them and scrolling the mouse-wheel up or down. Holding *SHIFT* whilst scrolling the mouse-wheel will make more finely grained changes.

Setting the Interface Size

Manifold has a fully resizable interface, allowing it to be scaled to accommodate your own preferences and screen resolution. If supported by the host, Manifold can be resized by dragging the resizer on the bottom-right of the interface. Alternatively, several pre-defined size options can be selected under *options / Zoom*. See also: [configure appearance](#).

The interface size can be restored to the standard size either by choosing *options / Zoom / Default Size* or by holding *SHIFT + CMD/ALT + R* (see [key bindings](#)).

Preferences

Access *Preferences* by clicking the cog icon (on the top right of the application) and choosing *Preferences...* from the menu.

From here, you can configure the [audio and MIDI devices](#), the [application appearance](#), the [key bindings](#), the default [author name](#), and the channel used for [MIDI learn](#).

Configure Audio and MIDI

When running Manifold as a standalone application, you will need to configure your audio and MIDI devices. When running as a plug-in, this option is not available because audio and MIDI routing is provided by the hosting application; consult the host's documentation for details. To access the *Devices* configuration panel, select *Preferences...* under the *options* menu (from the cog on the top right of the application).

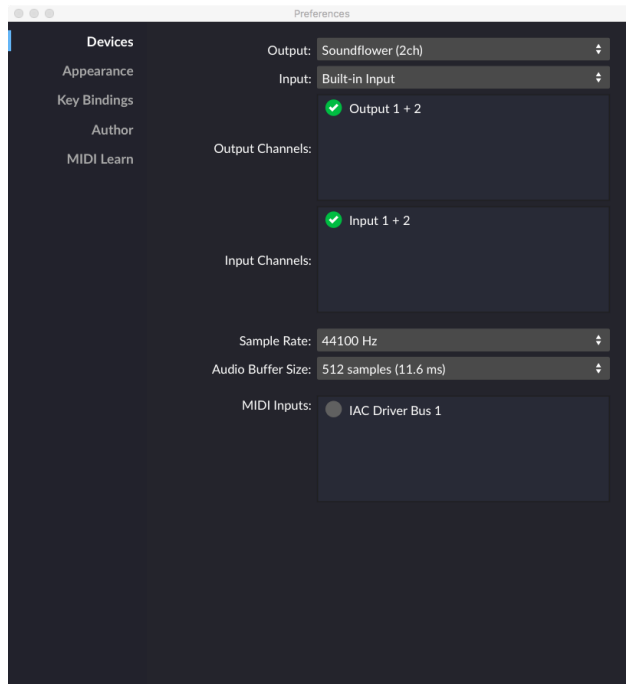


Figure 2: Devices Panel

From this dialog, the following details of your Audio and MIDI setup can be configured:

- Select the *Input* and *Output* audio device(s) you want to use from the list of available devices. Certain devices tend to perform better than others so if multiple devices are available, you should favour: on Mac, using Core Audio; on Windows, using ASIO; on Linux, using JACK.
- For devices that support multiple channels, select the required *Input Channels* and *Output Channels* by checking the box besides the channel name. The Manifold standalone application can process only stereo audio channels.
- The *Sample Rate* dictates the overall quality of the audio output. Using a lower sample rate will reduce the presence of high-frequency components. Higher sample rates should therefore be preferred. However, be aware that the CPU usage is directly proportional to the sample rate. A good compromise between quality and CPU usage is 44100Hz, which is the sample rate of CD audio. Select the sample rate you require from the available list.
- The *Audio Buffer Size* governs latency; a smaller buffer means that Manifold will respond more quickly to MIDI messages and parameter changes, and there will be less delay between input and output. However, a smaller audio buffer size will require more CPU usage. Select the required audio buffer size from the available list. Using too small of an audio buffer can overload your computer to the extent that audible clicks are heard. In this case, increase the audio buffer size until clicks are no longer present.
- Select in the *MIDI Inputs* list any external MIDI devices with which you want Manifold to listen. MIDI devices can be mapped to parameters, and Manifold can also respond to MIDI program change messages.

Configure Appearance

Changes that affect the appearance of the Manifold user interface are configured here. To access these settings, select *Preferences...* under the *options* menu (from the cog on the top right of the application), and select *Appearance* from the items on the left.

Setting the *Magnification* scales the entire user interface. Any changes made to this option will not take affect until the dialog is closed.

The *Graphics Driver* options allow you to select a different rendering driver. An efficient graphics driver means that less of your processor's CPU is used in rendering the interface, leaving more CPU free to render audio and run plug-ins. Generally, 3d accelerated drivers such as OpenGL are the most performant. On macOS, the CoreGraphics renderer also delivers good performance.

Configure Key Bindings

Shortcut keys allow often-used actions to be performed quickly from the keyboard using a specific combination of key presses. These actions, and their required key combinations, are listed here. To access these settings, select *Preferences...* under the *options* menu (from the cog on the top right of the application), and select *Key Bindings* from the items on the left.

Each action can have any number of shortcuts assigned to it, including none.

To add a new shortcut key combination to a specific action:

1. Click the + button beside the action to which you wish to add a shortcut.
2. In the *New Key Binding* dialog, hold the key or combination of keys that you want to assign to the action. If these keys are already bound to another shortcut, a warning will appear; despite the warning, the binding can still be made, which may result in ambiguity when the keys are pressed.
3. Press *OK* to make the binding, or *Cancel* to discard the change.

Bindings can be deleted by clicking the *X* button on the key combination that you wish to remove. Some shortcuts are hard coded into the system (such as copy and paste), and cannot be removed.

You can restore all shortcuts to their default values by pressing *Set All To Default*, or restore only some shortcuts by selecting their actions and clicking *Set Selected to Default*.

Some shortcuts may not be available in certain hosts because the hosts themselves consume the key presses. In these cases, redefine the shortcut to something that does not conflict with keys used by the host.

Configure Default Preset Author

The name entered here will be used as the author name for any newly created presets. To access this setting, select *Preferences...* under the *options* menu (from the cog on the top right of the application), and select *Author* from the items on the left.

When saving a preset, you can override this, but setting it here saves you the hassle of having to put your name into every new preset.

Configure MIDI Learn

When using an external MIDI device to control Manifold, Manifold can be set to listen to MIDI messages on all channels (*Omni mode*), or on a single channel. To access these settings, select *Preferences...* under the *options* menu (from the cog on the top right of the application), and select *MIDI Learn* from the items on the left.

MIDI Control

MIDI Controllers

Instead of configuring a preset using a mouse, you can change any parameter value using a MIDI keyboard or control surface. This is done by mapping each parameter to a MIDI continuous controller (CC). Each parameter can only be mapped to a single MIDI controller; the same MIDI controller can, however, be mapped to several different parameters.

MIDI controller mappings are global; once defined, the same mapping assignments will be used by all Manifold Programs. This means that you only need define mappings once for your particular controller, and it will be usable in all your projects.

Display Current MIDI Controller Mappings

To view the current MIDI controller mappings:

1. Enter *MIDI Learn Mode* by choosing *Start MIDI Learn* under the options menu. Each parameter's mapped MIDI controller will now be displayed on an overlay. If room allows, the channel will also be displayed, or X for omni-channel mappings.
2. When you have finished viewing the MIDI controller mappings, choose *Stop MIDI Learn* under the options menu.

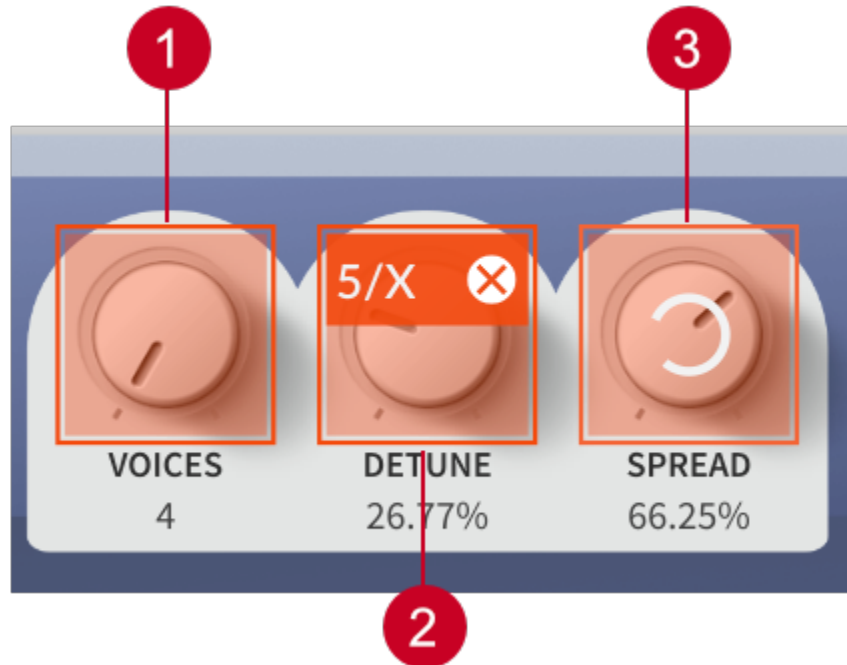


Figure 3: MIDI Mapping. (1) Unmapped Control; (2) Mapped Control; (3) Control Currently Being Mapped

Assign MIDI Controllers to Controls

To map a MIDI controller to a parameter:

1. Enter *MIDI Learn Mode* by choosing *Start MIDI Learn* under the options menu.
2. Click on the parameter you wish to map to a MIDI controller.
3. Turn your MIDI controller. The parameter will now be labelled with the MIDI CC number of this controller.

You can now either:

- Map another parameter by repeating these steps from Step 2.
- Finish mapping parameters by choosing *Stop MIDI Learn* under the options menu.

Remove MIDI Controller Mappings From Controls

To remove a mapped MIDI controller from a parameter:

1. Enter *MIDI Learn Mode* by choosing *Start MIDI Learn* under the options menu.
2. Click on the close button of the parameter from which you wish to remove the mapping. This parameter will become unmapped, and the CC number label on the pa-

parameter will disappear to reflect this.

You can now either:

- Remove the mapping from another parameter by repeating these steps from Step 2.
- Finish removing parameter mappings by choosing *Stop MIDI Learn* under the options menu.

MIDI Program Change Lists

You can change presets by using *MIDI program change* commands. This requires a MIDI keyboard or a control surface with the ability to send such MIDI messages; consult your controller's documentation for details. If using Manifold as a plug-in, this functionality is dependent upon the host correctly forwarding MIDI messages to the plug-in; check the documentation provided with your host for details.

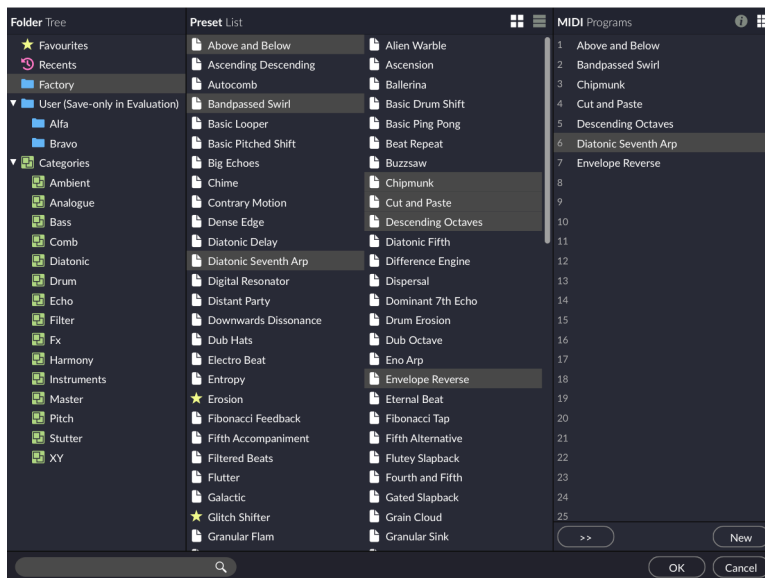


Figure 4: MIDI Program Change List

To select which presets are loaded in response to MIDI program change commands, you will need to create a MIDI program change list. Select *Edit MIDI Program Change List...* from under the options menu to display the MIDI program change list editor.

To add presets to the MIDI program change list, either double-click on a preset, or select a Preset and click the » button. Use the *info* and *list* button on the top-right of the window to toggle between viewing the list, and information on the selected preset.

Any presets in the MIDI program change Lists are automatically loaded and cached in memory. This means that Preset changes can be instant. There may be a slight pause after editing the MIDI program change list whilst the presets within it are loaded. When a

preset is saved, any entries in the MIDI Program Change List are saved alongside it. Note that setting a preset with a MIDI Program Change List as the [default preset](#) will cause all presets within the list to be loaded when a new instance of Manifold is loaded.

Preset Management

Parameters and Presets

You can modify the type of sound that Manifold produces by setting the values of parameters. Each parameter will affect a specific element of the sound. The state of all parameters is collectively called a preset. Presets are given a suitable name, and the name of the currently selected preset is shown in the menu bar. If the preset has been modified without being saved, a * appears beside the name.

Navigation Controls

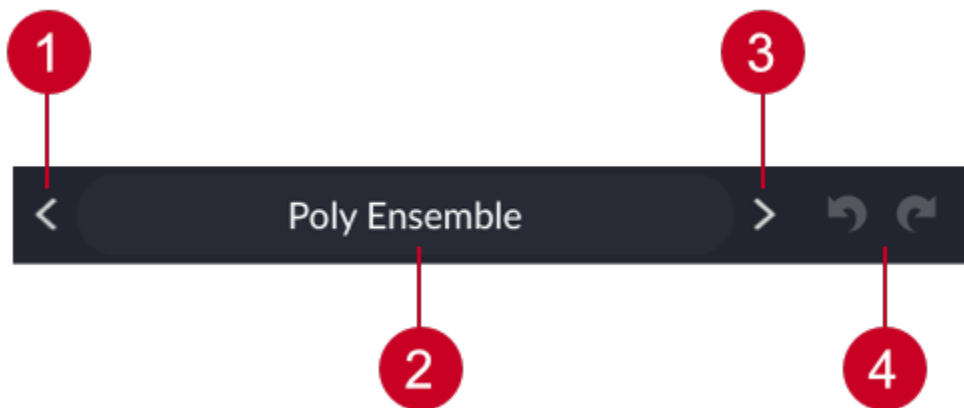


Figure 5: Navigation Controls. (1) Previous Button; (2) Preset Name; (3) Next Button; (4) Undo/Redo Buttons

If you wish to browse quickly through the presets, you can do so using the the *previous* and *next* controls. These controls are context sensitive, only displaying presets that are relevant to the last [search](#) you made. For example, if you had most recently searched for “analogue, bass”, only presets that match this will be selected. Scrolling the mouse-wheel when the mouse cursor is over the *preset name* will also load the next or previous preset, depending on the scroll direction.

Clicking on the *preset name* opens the [preset browser](#). By pressing *undo*, you can take back the most recent change made to a preset. *Redo* will re-apply the last undo changes. Note that only changes made via the Manifold interface can be undone; changes made externally (such as from a host application, or from a MIDI controller) are not undoable.

Creating a New Preset

Select *New* to create a new preset. This preset will be in the default initialised state. If you've made a sound worth keeping, be sure to save the preset before you create a new one, as the undo history will be discarded when the preset state is reset.

Comparing a Changed Preset to the Original Preset

Often you'll want to compare a preset that you have amended to see if it is actually an improvement on the original. Pressing the *AB* button temporarily reverts a changed preset back to its original state. Pressing the *AB* button a second time returns to the changed preset. This method allows you to easily contrast the preset changes you have made to the original preset state.

Opening Presets

To select a preset from within your preset library, click on the preset name in the menu bar to open the preset browser.

Saving Presets

Click *Save* to save the current preset. Choose the location in which to save the preset in the folders window within the [preset browser](#). Click *OK* to actually save the preset.

The Preset Browser

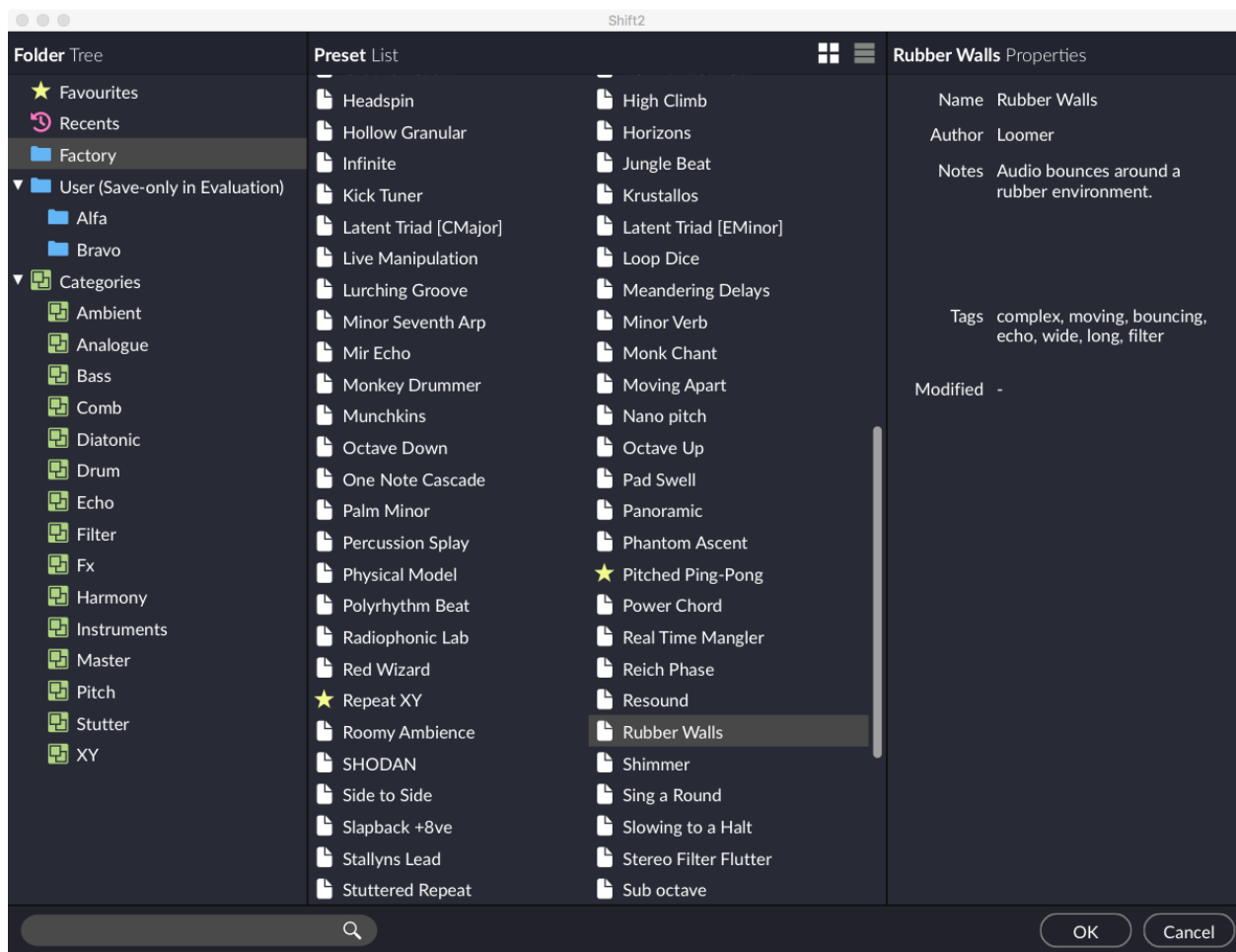


Figure 6: Preset Browser

Presets can be divided into two groups; factory, and user. Factory presets are a collection of example presets built into Manifold. Factory presets can't be overwritten, although you can, of course, edit and save your own presets derived from factory presets.

User presets are stored as individual files on your computer's hard drive. They are found in the following locations:

- **macOS:** `~/Library/Application Support/Loomer/Manifold/Presets`
- **Linux:** `$XDG_DATA_HOME/Loomer/Manifold/Presets`
- **Windows:** `Documents\Loomer\Manifold\Presets`

Only registered users can open user presets. Unregistered versions of Manifold are limited to the factory presets. Unregistered versions of Manifold can, however, still save presets. Any presets created in the unregistered evaluation of Manifold can be opened by purchasing a licence for Manifold.

Preset Hot-swap

Selecting a preset in the browser will automatically load the preset: this functionality is called *preset hot-swap*. Preset hot-swap allows you to quickly preview presets in the context of the current project. If you decide to use the selected preset, close the browser by pressing *Return* or by clicking *OK*. To return to the preset you had open before you accessed the browser, close the browser by pressing *Escape* or by clicking *Cancel*.

Preset Meta Data

Presets can have meta data attached to them. Meta data doesn't influence the sound of the preset, but is used in categorizing, searching, or annotating them. The following meta data is available:

- **Author:** The name of the preset creator. You can enter your name into the [preferences dialog](#), and that name will automatically be used as the default author for all new presets.
- **Notes:** Any additional notes about the preset, such as influences, playing tips, description, etc.
- **Tags:** Tags are short words that describe the preset. Examples are: “bass”, “distorted”, “monophonic”, “trance”, “quiet”, etc. Tags are used to help quickly search for a specific sound.

Searching for Presets

Type keywords into the search field to locate all presets that match this description. The search will match the keywords in the Preset Name, Author, and Tags fields, and parent folder name.

Categories

Categories allow you to quickly access a subset of your presets. Categories are listed under the categories node in the preset browser. A category is simply a shortcut to searching for the category name; a category called “Bass” will list all presets that match the search criteria “Bass”. You are not limited to create categories based on the type of sound: you can, for example, create categories for preset authors, or indeed for any other search term. Provided you tag your own presets, they will automatically be added to the correct category (or categories: presets can belong to multiple categories; a preset could be both a “Bass” and “Lead” sound, for example.)

Preset Formats

Presets in the user presets folder need to be in either native .xml format, or VST .fxp or .fxb format. Standalone, and Audio Unit versions can also open .fxp or .fxb files within the browser. Please ensure any files in the user presets folder have the correct file extension.

As a general rule, you should prefer saving presets in Manifold's native .xml format over any proprietary host format, as this can make it easier to share presets with users on other hosts.

Copying and Moving Presets

Presets can be moved or copied to another folder by dragging and dropping a preset onto the destination folder. By default, presets will be moved. You can instead copy the preset by holding shift whilst dragging. Note that presets inside banks (either .xml or .fxb banks), can only be copied, not moved. Multiple presets can be moved or copied at once by selecting more than one preset.

The Default Preset

The default preset is automatically opened when a new instance of Manifold is created. To specify the default preset, right-click on a preset and choose *Set as Default*. Note the AAX plug-ins do not support default presets: a new instance of Manifold as an AAX plug-in will always begin with an initial preset state equivalent to a new preset.

Restoring Deleted Factory Presets

To reinstate any deleted factory presets, right-click on the factory branch in the [preset browser](#) and choose *Restore Factory Presets*.

User Folder Management

Folder management is performed by right-clicking on a user folder, and selecting an option from the pop-up menu. From here, you can create a *New Folder*, *Rename Folder*, or *Delete Folder*. On Windows or macOS, you can also quickly locate this folder in Finder or Explorer by choosing *Show In Finder / Explorer*.

Favourites

Favourite presets can be quickly located under the *Favourites* node in the preset browser. A preset can be added to or removed from the favourites list by right-clicking and choosing *Add to Favourites* or *Remove from Favourites*, respectively.

Status display

Status display information is displayed at the bottom right area of the Manifold interface:

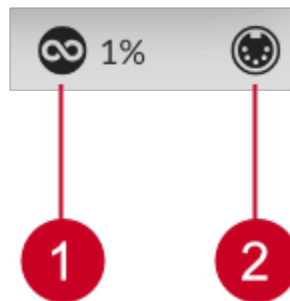


Figure 7: Status Display. (1) CPU Usage; (2) MIDI Input

CPU Usage Monitor

The *CPU usage monitor* displays the percentage of processor resources dedicated to generating the audio output. The total processor resources on a computer are limited, so when Manifold increases its CPU usage, there will be less CPU resources remaining for other plug-ins and applications. Manifold's CPU requirements will differ depending on which preset is currently loaded and how that particular preset is configured.

A value of 100% indicates that your computer is running at maximum capacity and will not have enough processing power remaining for anything else. You might notice audio output become temporarily glitchy, or that the user interface becomes sluggish. There are several methods for resolving this:

- Choose a different preset that has lower CPU usage.
- Reduce the number of voices in the current preset.
- If running in standalone mode, you can increase the latency or decrease the sample rate. See section [Configure Audio and MIDI](#).
- If running as a plug-in, changing your host's audio device settings can improve performance.
- If your host offers freeze or offline processing, you might be able to render the audio output in non-realtime.

MIDI Input Monitor

The *MIDI input monitor* flickers to show that a MIDI message has been received. You can use this to confirm that your MIDI controller is configured correctly for Manifold.

Contact Details

Online

Website: www.loomer.co.uk

Support and FAQ: www.loomer.co.uk/support.htm

Email

Sales information: sales@loomer.co.uk

Technical support and feature requests: support@loomer.co.uk