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# Loomer Sequent User Manual

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# End User Licence Agreement

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## Development Credits

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Developed by       Loomer  
Interface by       Kevin Barry - <http://www.inquer.co.uk>

Tested by           Clifton Cameron  
                      kuniklo  
                      Scott Simons (rexlapin)  
                      taoyoyo

VST PlugIn Technology by Steinberg Media Technologies GmbH. This software is based in part on libpng, zlib, and JUCE.

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# Requirements

## Mac OS X requirements

- Requires Mac OS X v. 10.5 or later
- x86 based processor 1.0Ghz, or above, with SSE
- 512 MB RAM

## Windows requirements

- Windows XP or 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

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# Sequent Overview

## What is Sequent?

Sequent is a modular multi-effects unit, the ideal tool for mangling audio on stage or in the studio.

Sequent has seven individual effect blocks: a Beat Looper; two Filters, both switchable between lowpass, bandpass, and highpass modes and capable of self oscillation even without an audio input; an oversampled Distortion unit; a Gate with variable depth and slew; a Panner; and a Delay unit capable of sub millisecond delay times, great for creating everything from dub, slapback, and bouncing ball style echoes, to metallic comb filters or flanger effects.

Effect blocks can be connected in practically limitless ways by dragging virtual audio cables between them. Route effects in parallel, in series, or any other combination you can dream of.

Want variation? Each effect parameter has its own step sequencer, perfect for building interesting modulation motifs. Easily craft polyrhythmic sounds by individually setting the number of steps and speed for each effect.

Cut-up and rebuild audio in realtime. Use Sequent's flexible Looper to create anything from subtle loop variations, to micro-programmed glitches.

Creative block? Let Sequent do the work. Distinct random controls for each parameter allow everything from slight variations, to complete aleatoric composition.

Combine sequencer and effect settings into patterns, which can be instantly between switched from the on-screen interface, or even using a MIDI controller.

Controls can be easily mapped to a hardware controller using the simplified MIDI Learn feature.

## Plug-in vs Standalone

Depending upon your individual studio setup, Sequent can either be used as a plug-in component of a 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 extra layer of complexity added by the host consuming resources, performs 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.

## Sequent formats

For the Mac, the following formats are provided:

- Standalone Application
- Audio Unit (AU) Plug-In (32-bit and 64-bit)
- VST Plug-in
- RTAS Plug-In
- AAX Plug-in (64-bit)

These formats are available for Windows PC:

- Standalone Application
- VST Plug-in (32-bit and 64-bit)
- RTAS Plug-in
- AAX Plug-in (64-bit)

These formats are available natively for Linux:

- Standalone Application (32-bit and 64-bit)
- VST Plug-in (32-bit and 64-bit)

## Supported channel configurations

For maximum flexibility, Sequent can be used in several possible input and output channel configurations. Sequent 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.

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# Installation and Registration

## Mac OS X installation

1. Start the installation process by double-clicking the Sequent 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 agree to the licence terms.
4. Select a destination volume into which to install Sequent, 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:

- VST plug-in into */Library/Audio/Plug-Ins/VST*
- Audio Unit plug-in into */Library/Audio/Plug-Ins/Components*
- RTAS plug-in into */Library/Application Support/Digidesign/Plug-Ins*
- 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 Sequent installer application, Setup.exe.
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 agree 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:

- VST plug-in into the VST plug-ins folder, which is, unless configured otherwise, *C:\Program Files\Steinberg\VSTPlugins\*
- RTAS plug-in into *C:\Program Files\Common Files\Digidesign\DAE\Plug-Ins\*
- AAX plug-in into *C:\Program Files\Common Files\Avid\Audio\Plug-Ins\*
- Standalone application, documentation and default Bank into *C:\Program Files\Loomer\Sequent*. On a 64-bit Windows platform, the Standalone application will install into the *Program Files (x86)* folder.

## Linux installation

Sequent 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 Sequent.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 Sequent
mv SequentVST.so $VST_PATH
```

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

Sequent 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 Sequent, it will run in evaluation mode with the following limitations:

- User created Presets can be saved, but not loaded.
- Audio output will stop after 30 minutes of continuous use. The only way to continue using Sequent is to restart the application.
- Output will be periodically interrupted, approximately every 30 seconds, 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 Sequent on a particular machine will remove the evaluation limitations for all Sequent 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 Sequent licence:

1. Launch Sequent. This can be either the standalone application, or as a plug-in.
2. From the **Options** menu, choose **Purchase Sequent Licence**. This will launch the shop website, from where a Sequent Licence can be purchased by clicking **Add To Cart**, followed by **Checkout**. Follow the on-screen prompts to enter your payment details and confirm your purchase.
3. Once you have purchased Sequent, 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 Sequent.

To register your copy of Sequent:

1. Choose **Enter Sequent 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 Sequent 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 Sequent, 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 Sequent is currently running as a plug-in, remove it from the host and add a new instance of it.
5. Sequent 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.

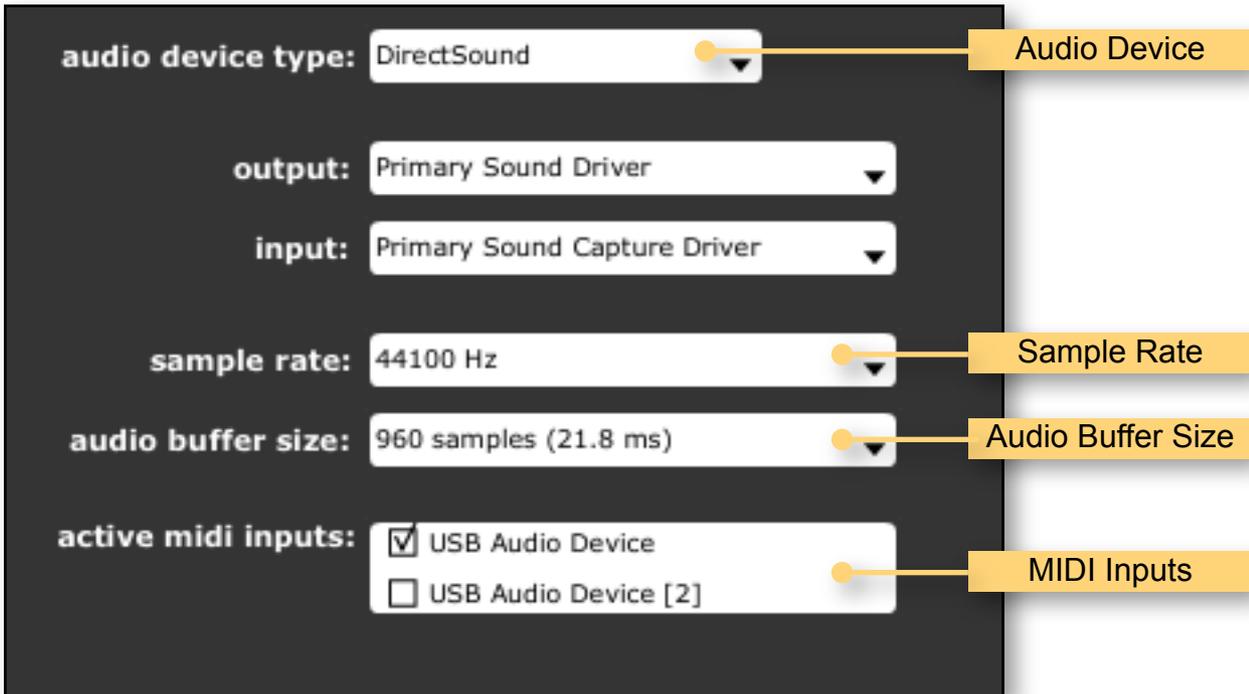
If you are having problems registering your installation of Sequent, please consult the detailed step-by-step instructions at <http://www.loomer.co.uk/support.htm> .

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# Audio and MIDI Configuration

## Setup Audio and MIDI

When running Sequent as a Standalone application, you will need to setup your audio and MIDI interfaces. Note that when running as a plug-in, audio and MIDI routing is provided by the hosting application; consult the host's documentation for details. To open the Audio & MIDI Configuration dialog, select **Audio & MIDI Configuration** under the **Options** menu. The following dialog will be displayed:



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

- **Audio Device.** Select the Audio Device 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.
- **Sample Rate.** 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.

- **Audio Buffer Size.** The Audio Buffer Size governs latency; a smaller buffer means that Sequent will respond more quickly to MIDI messages and Parameter changes. 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.
- **MIDI Inputs.** Check any MIDI Input devices that you want to use with Sequent.

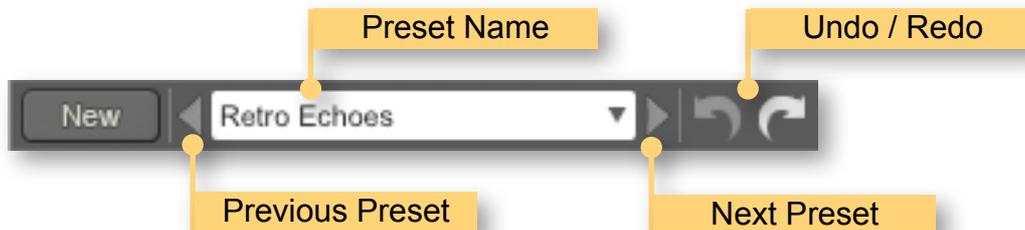
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# Preset Management

## Parameters and Presets

You can modify the audio output that Sequent produces by setting the value of *Parameters*. Each Parameter, such as Volume, or Filter Sequence, will affect a specific element of the sound. The state of all Parameters are collectively called a *Preset*. Presets are given a suitable name, displayed in the Menu Bar, to describe the sound they produce.

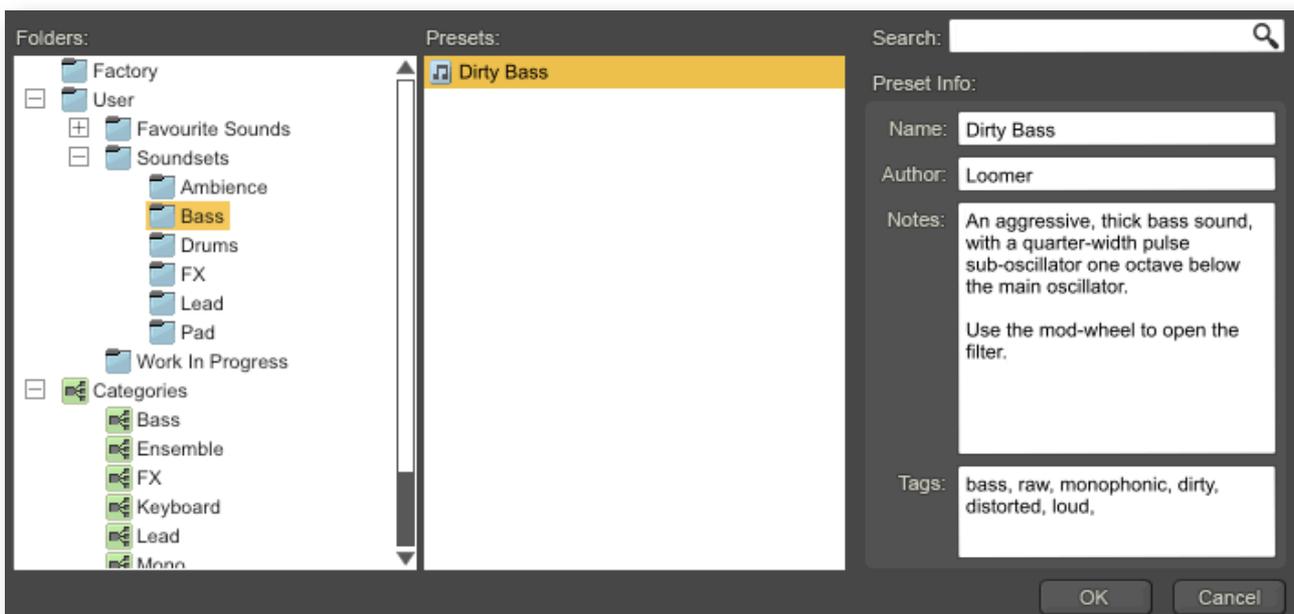
## Navigation Controls



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 you. For example, if you search for “analogue, bass”, only Presets that match this will be shown in the preset browser. The mouse-wheel can also be used to quickly browse through presets.

## 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.



Presets can be divided into two groups; **Factory**, and **User**. Factory Presets are a collection of example Presets built into Sequent. 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. User Presets are found in the following location:

**Mac OS X:** *~/Library/Application Support/Loomer/Sequent/Presets/*

**Linux:** *\$XDG\_DATA\_HOME/Loomer/Sequent/Presets, or ~/.local/share/Loomer/Sequent/Presets*

**Windows:** *My Documents/Loomer/Sequent/Presets/ or Documents/Loomer/Sequent/Presets/*

Only registered users can open User Presets. Unregistered versions of Sequent are limited to the Factory Presets. Unregistered versions of Sequent can, however, still save Presets. Any Presets created in the unregistered evaluation of Sequent can be opened by purchasing a licence for Sequent.

## 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 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 your original Preset, 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.

**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.)

## Saving Presets

Click **Save** to save the current Preset. Choose the location in which to save the Preset in the Folders window. Press **OK** to actually save the Preset.

## XML / FXP / FXB support

Presets in the User Presets folder need to be in either native .xml format, or VST .fxp or .fxb format. Standalone, Audio Unit and RTAS 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.

## Copying & 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.

## Default Preset

The Default Preset is automatically opened when a new instance of Sequent is created. To specify the Default Preset, right-click on a Preset and choose **Set as Default**.

## 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 MIDI Program Change commands; consult your controller’s documentation for details. If using Sequent 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.

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 **MIDI** 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 **View** button to toggle between viewing the MIDI Program Change 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 Sequent is created.

## Create a new Preset

Select **New** to create a new Preset. This Preset will be in the default initialized state.

## Compare 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 **A | B** button temporarily reverts a changed Preset back to its original state. Pressing the **A | B** 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.

## Restoring Deleted Factory Presets

To reinstate any deleted Factory Presets, right-click on the Factory branch and choose **Resore 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 Mac OS X, you can also quickly locate this folder in Finder or Explorer by choosing **Show In Finder / Explorer**.

## Partial Presets

As well as full Presets containing the entire state of Shift, you can also create Partial Presets (known as **Partsets**). Partsets contain only the settings for a specified component. Shift support Partsets for the following components: Looper, Filter 1, Filter 2, Gate, Pan, Distortion, Delay, Routing.

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

**Mac OS X:** `~/Library/Preferences/Loomer/Sequent/Partsets/`

**Linux:** `$XDG_DATA_HOME/Loomer/Sequent/Partsets`, or `~/.local/share/Loomer/Sequent/Partsets`

**Windows:** `My Documents/Loomer/Sequent/Partsets/` or `Documents/Loomer/Sequent/Partsets/`



## Creating a Partset

To save the current settings for a component into a Partset template, click on the save (floppy disc) icon next to the component. Give the Partset an identifying name, and click **OK** to save it.

## Loading a Partset

To load the current settings for a component from a Partset template, click on the open (folder) icon next to the component, and select the required Partset from the browser list.

## Partset Hot-Swap

Selecting a Partset in the browser will automatically load it: this functionality is called Partset Hot-Swap. Partset Hot-Swap allows you to preview Partset in the context of the current project. If you decide to use the selected Partset, close the browser by pressing *return* or by clicking **OK**. To return to your original Partset, close the browser by pressing *escape* or by clicking **Cancel**.

## Restoring Deleted Factory Partsets

To reinstate any deleted Factory Partsets, right-click on the Root branch node in the component's Partset browser, and choose **Resore Factory Partsets**.

## Undo / Redo

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 Sequent interface can be undone; changes made externally (such as from a Host application, or from a MIDI controller) are not eligible for Undo.

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# MIDI Controller Mapping

## MIDI controllers

Instead of configuring a Program using a mouse, you can change any Parameter values using a MIDI keyboard or a control surface. This is done by mapping each Parameter to a *MIDI Continuous Controller (CC)*. A Parameter can only be mapped to a single MIDI controller; the same MIDI control can, however, be mapped to several different Parameters.

MIDI Controller mappings are global; once defined, the same mapping assignments will be used by all Sequent Programs. This means that you only need define mappings once for your particular controller.

## 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 beside it in yellow text. Parameters without any mapping will be labelled -.
2. When you have finished viewing the MIDI controller mappings, choose **Stop MIDI Learn** under the **Options** menu.



## 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 should now be labelled with the MIDI CC number of this controller.
4. 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 Parameter from which you wish to remove the mapping. This Parameter will become unmapped, and the CC number label on the Parameter will disappear to reflect this.
3. 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.

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# Using Sequent

Sequent can be used as either an insert or send effect. When used as an insert effect, Sequent is placed directly in a host's audio channel. As a send effect, Sequent 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.

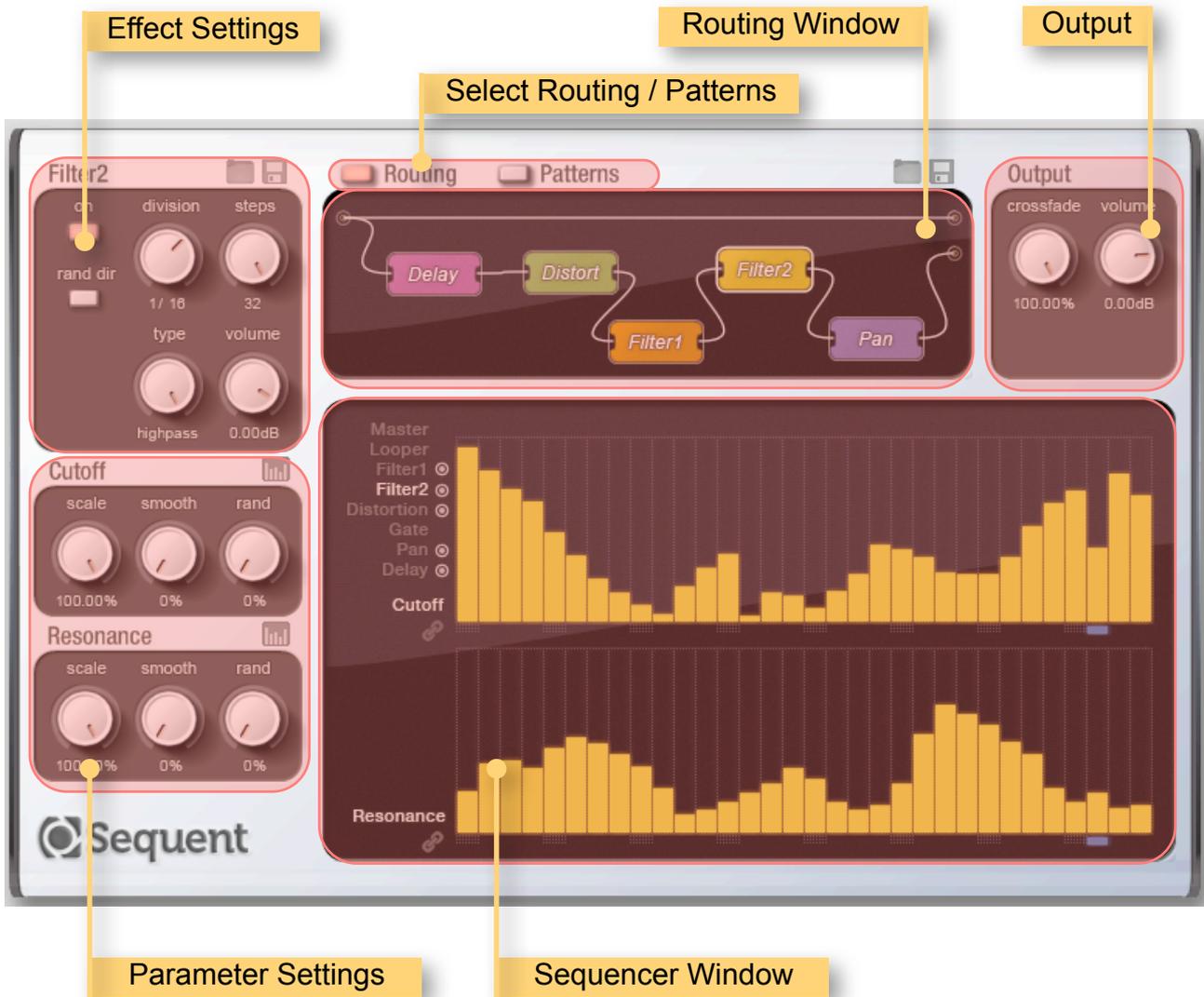
## Host Transport Syncing

When Sequent is hosted as a plug-in, syncing its internal sequencers with any hosting application requires the host to pass Transport information (such as play or pause state, current tempo, and current playhead position) through to it. In the majority to cases, hosts will handle this transparently. However, if Sequent does not appear to be syncing to your host, several things worth checking are:

- Your host may only provide Transport information when the the host's Transport is playing, not when it is stopped or paused.
- Your host may only pass Transport information to a channel that is active. Ensure that the channel is not muted or bypassed, and that audio is routed both into and out of the channel.
- See if your host has an option to 'Configure as a tempo-based effect', or something similarly named, to a plug-in.

If you are still having syncing problems, consult your host's documentation to find out how to sync plug-ins to the host application transport.

## Interface



## Routing

The Routing Window gives an overview of the signal flow through Sequent. Audio signals enter through the Input node on the Left, get passed through the Effect Blocks, and exit through the right side Output nodes.

Sequent consists of seven Effect Blocks that can be routed in practically unlimited different configurations.

To move an Effect Block:

1. Click, and hold down the mouse button, on an Effect Block in the Router.
2. Drag the Effect Block to its new position.
3. Release the mouse button.

Unused effects, those that have no cables to or from them, can be removed from the Routing Window. To hide an unused Effect Block, either:

1. Right-click on an Effect Block, or
2. Drag an Effect block off the Routing Window.

To add a hidden Effect back to the Routing Window:

1. Right-click on any empty area of the Routing Window.
2. Choose which Effect you wish to be revealed.

To wire an Effect Block into the signal flow:

1. Click, and hold down the mouse button, on either node of an Effect, or on the Routing Window Input or Output node.
2. Drag the virtual cable to the corresponding node of another Effect, or onto a Routing Window Input or Output node. The cable will snap to any valid connection point when you drag near to it. Note that each Effect Block Input node can have up to four cables connected to it. There is no limit to the amount of cables an Effect Output node can connect to. Effect inputs can only be connected to other Effect outputs; likewise, Effect Outputs can only be connected to the Inputs of other Effects.
3. Release the mouse button to make the connection.

To remove a cable from the signal flow:

1. Right click on any cable. Cables are hi-lighted when the mouse moves over them to ensure that you are deleting the correct cable.

Audio coming from your host or soundcard appears via the Input Node on the top left of the Routing Window. Audio going to your host or soundcard leaves via the Top and Bottom Output nodes on the right of the Routing Window. (Note that the Top and Bottom Output nodes are discrete stereo outputs, not two monophonic Left and Right outputs.)

To pass audio through unprocessed, connect the Input directly to either Output node. In the simplest Sequent setup - using just one Effect - connect the Input to the desired Effect Input, and the Effects Output to the Router Output.

## Output

The **volume** Parameter controls the overall loudness of Sequent's audio output. The **crossfade** Parameter sets the relative output of the Routing Windows two outputs.

## Crossfading

The Crossfade control can be used to smoothly mix a proportion of signals from both the Top and Bottom Router output nodes.

This has several useful applications, including:

- When used as an insert effect, you may sometimes wish to mix the original dry signal with the wet signal from Sequent. To do this, connect the Input node directly to the Top Output, and connect any Effect Blocks to the Bottom Output. The ratio of original to processed signal can be decided with the crossfade control, with 0% being entirely dry, and 100% being entirely wet.
- Several different chains of Effects can be connected to each Output node. You can seamlessly crossfade between these Effect chains with the Crossfade control.
- Whilst playing live, you can sequence Patterns and route Effect Blocks to the Bottom Output whilst listening to the mix from the Top Output by setting Crossfade to 0%. Then by switching Crossfade to 100%, you can listen to the Bottom Output whilst preparing more Effect Routes or Patterns on the Top Output. By juggling between the Outputs like this, you can constantly be creating new sounds without any break in the output audio signal.

## Effect Settings

To view all the configuration parameters for an Effect Block, the Effect Block must first be selected. To select an Effect Block, either:

1. Click on the Effect Block in the Routing Window.
- or
2. Click on the Effect Name in the top left of the Sequencer Window.

Common to all Effects are the Sequencer Controls :

- The **on** Parameter toggles the Effect between On ( in which the Effect processes audio ), and Off ( in which the Effect is bypassed. ) Note that any Effects that are part of the Routing Window's signal flow will always be running (and hence consuming CPU resources), regardless of whether they are On or Off. If you want to disable an Effect completely, ensure that it is not connected to any other Effects in the Routing Window. An Effect can also be toggled on and off by double-clicking it in the Routing Window. On Effects and shown in colour; Off Effects in grey.
- The **division** Parameter controls the length of each Step in the Sequencer. The length is always expressed as a musical division, from 1 bar to a 128th note.
- The **steps** Parameter sets the number of Steps in the Sequencer. When the last Step has been played, the Sequencer will loop back round to the first Step.
- When the **rand dir** Parameter is turned On, the Sequencer will jump randomly between Steps, as opposed to playing them consecutively. Each Step has an equal chance of being played. The overall chance of any Step being played is equal to: one divided by the number of steps. For example, if a Sequence has twenty steps, the chance of each one playing at each Division is five percent.
- The **volume** Parameter controls the amount of gain of a signal leaving this Effect.

- The **start** pointer sets at which step the sequence will begin playing. This can be used to offset sequences, or to account for syncing in arrangements where time signature changes have meant that step 1 no longer lands on a beat.



## Sequencers

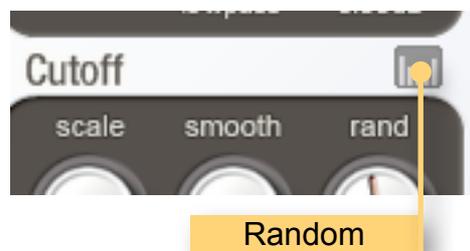
The twenty-two Step Sequencers in Sequent provide time varying modulations sources for all the Effect Parameters. The modulation depth at any time is governed by the the value of the Sequencer at the current **playhead** position. The playhead moves in time with the current tempo, producing a varying modulation pattern.

Any active Sequencers are marked by a small node icon next to the Effect's name.

## Parameters Settings

Each Effect Parameter will have a number of controls. In order to see the controls for a specific Parameter when an Effect has more than two, you will need to click on the Parameter name in the bottom left of the Sequencer Window.

- The **on** control (for Trigger Parameters) acts as a global control for a Trigger Sequencer. Effect Triggers will only fire when both this control and the Trigger Sequence step are on. By assigning this to a MIDI controller, you can quickly enable and disable Triggers without needing to edit the Sequences.
- The **scale** control acts as a multiplier for a Sequencer. By assigning this to a MIDI controller, you can control Parameters live without needing to edit the Sequences.
- The **smooth** Parameter governs the rate of change of values coming from Sequencer Steps. At 0%, the Sequencer will instantly jump between values. As smooth increases, changes will be increasingly slide between values.
- The **rand** Parameter controls the amount of random deviation added to the Sequencer values. At 0%, the Sequencer will play exactly as notated. At rand increases, the percent chance of a Sequencer Step value being different, as well as the amount of random change, increases.



## Random Pattern Creation

Sequent can generate a new random pattern for the selected parameter by pressing the Random button.

## Effects

Sequent has seven Effect Blocks: a Looper; two Filters; Distortion; Gate; Pan; and Delay.

### Looper

The Looper is a tempo-synced delay line that divides incoming audio into short Slices. Each Slice can be fired using a Trigger, which will cause the Slice to repeat a number of times. The Slice playback can be configured using the Looper's Sequencers:

- Slices will be repeated when an on step is hit in the **Trigger** Sequencer.
- Each Slice will be repeated a number of times, as specified by the **Repeats** Sequencer.
- The **Length** Sequencer sets the length, in musical divisions, of a Slice.
- The **Offset** Sequencer decides which segment of previous audio is used in the Slice. When set to 0, the Slice will always be the portion of audio just played. By increasing the Offset, the Slice can be taken from older sections of audio. Offset also takes the Length Sequencer into account: the actual section of audio to be played can be calculated by multiplying the Offset by the Length. For example, with Offset set to 3, and Length to 1/8, the Slice will be from 3/8th notes previous.
- When **Reverse** is turned on, the Slice will play backwards.
- The **Pitch** Sequencer sets the pitch of the Slice in semitones.
- The **PitchDecay** sets the change in Slice pitch for consecutive repeats. For this to have an effect, the Repeats must be set to two or above.
- When **Sync** is turned on, Slice repeats will play back in sync with the specified Length. When turned off, Slices will instead repeat when the current Slice has finished playing. Slices played at the standard Pitch (0.00 semitones) are always perfectly synced to the length, so the Sync Sequencer in this case will have no effect.
- The **Level** Sequencer sets the volume of the repeated Slices.
- Control the relative level of repeated Slices with the **LevelDecay** Sequencer. For this to have an effect, the Repeats must be set to two or above.
- Whilst Sequent's Looper tries to avoid clicks in audio, some troublesome audio sources (such as pads) may be difficult to cleanly loop in realtime. The **fade** Parameter, when enabled, adds a short fade to each repeat to remove such clicks.

- The **mode** Parameter sets how the Looper repeats are mixed with the input. For **gate** mode, the input is entirely muted, and only repeats can be heard. For **mix** mode, the repeats are added to the input. In **duck** mode, the input is muted ('ducked') only when repeats are playing.

## Filters

- The **Cutoff** Sequencer sets the cutoff point of the filter.
- The **Resonance** Sequencer sets the resonance of the filter. Sequencer's filters are based on a very aggressive filter model, and with enough resonance can be made to self-oscillate.
- The **type** Parameter sets the type of filter algorithm: **lowpass** removes all frequencies below the cutoff; **bandpass** removes the frequencies outside the cutoff; **highpass** removes all frequencies above the cutoff.

## Distortion

The Distortion is a harsh effect that models the overdriven sound of an amplifier.

- The **Drive** Sequencer sets the amount of overdrive. Very aggressive tones can be produced, even with low Drive settings.

## Gate

The Gate is a controllable ducker that quickly mutes audio in a specific pattern to give a choppy stuttering sound.

- The **Trigger** Sequencer decides if the Step is gated. When on, the Gate is active and the audio is ducked for this Step.
- The **Depth** Sequencer decides the level of ducked input. At 0%, the input is completely muted. Higher values can be used to lower the input, without removing it completely.
- The **Slew** Sequencer controls how quickly the ducker turns on and off. At 0%, the Slew is instant. Higher values can be used to add a gentle slope to the ducker: this is useful to remove clicks that can be caused by instantaneous ducking, or for creating certain effects like tremolo.

## Pan

The Pan Effect controls the spread of the signal in the stereo field.

- The **Position** Sequencer specifies the placement of the audio signal in the stereo field. Values range from far left to far right. The default is centered, which maintains the stereo information of the input audio.

## Delay

The flexible Delay effect is used to either create a variety of time based effects, from echoes to flangers and comb filters.

- The **Send** Sequencer controls the amount of signal sent to the delay network. At 0%, the delay network receives no audio input whatsoever.
- The **Time** Parameter controls the length of time between successive echoes. When **sync** is turned on, the time is specified in musical divisions. When sync is off, time is expressed in ms. Very short ms delays can be used to create effects such as flangers or comb filters.
- The **Feedback** Parameter specifies how much of the Delay's output is fed back into its input.
- When **Thru** is turned on, the dry audio will be passed through to the Delay's output when the Delay is disabled. When **Thru** is turned off, a disabled Delay effect will generate silence. This is useful when routing the Delay as a Send or Parallel Effect. (Note that all the other Effects will always pass the dry audio through when disabled.)

## Patterns

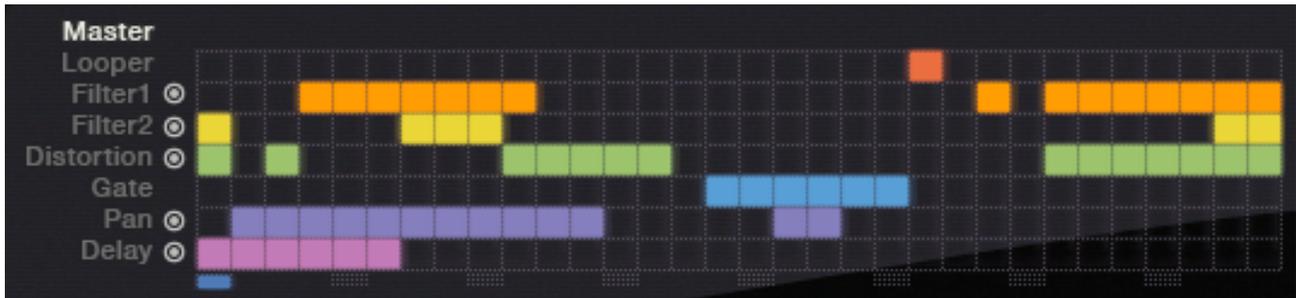
Sequencer settings can be grouped together into Patterns, which can then be switched between live. Each Pattern can have different combinations of Effects enabled. Switch between Patterns to quickly enable and disable specific Effects.

- Select the current Pattern by clicking on a **Pattern Select** button.
- Reset a Pattern to its default state by clicking on the **initialise** button.
- Copy the current Pattern to the clipboard by clicking on the **copy** button.
- Paste any Pattern in the clipboard to the current Pattern by clicking on the **paste** button.
- Paste any Pattern in the clipboard to all Patterns by clicking on the **paste to all** button.
- The **Pattern Select** buttons can be mapped to a MIDI CC Controller.
- Each **Pattern Select** button corresponds to a musical note, from **C** to **B**. Patterns can be changed by playing the corresponding note. Note that sending MIDI notes to an effect is not supported by all hosts. Consult your hosts documentation for instructions on configuring MIDI controlled effects. The steps for a few commonly used hosts are outlined below.

## Master Sequencer

The Master Sequencer is used to independently control which Effects are enabled. By arranging steps along the time-line, complex evolving scores, with Effects turning on and off, can be produced. When a step for a particular Effect lane is lit, the Effect will be activated; when the step is empty, that Effect will be bypassed.

When the Master Sequencer is enabled, Effects will be bypassed unless both their local **on** parameter is enabled, and the relevant step in the Master Sequencer is active. The Master Sequencer can therefore be overridden for a particular Effect (with, for example, a MIDI controller) by toggling the Effect's on parameter.



## Configuring MIDI Controlled Effects in Ableton Live

1. Add Sequent to the Track you wish to process.
2. Create a new MIDI Track using "Insert MIDI Track". Arm the Track for MIDI recording.
3. Under the MIDI To setting, select the Track in which Sequent is inserted. Choose Sequent as the destination.
4. Patterns can now be switched by playing MIDI notes.

## Configuring MIDI Controlled Effects in Apple Logic

1. Create a new Software Instrument Track.
2. Add Sequent to the IO of this Track as a "AU MIDI Controlled Effect"
3. Choose the audio track you wish to process from the sidechain option (top right of the Sequent UI window.)
4. Patterns can now be switched by playing MIDI notes

## Control types

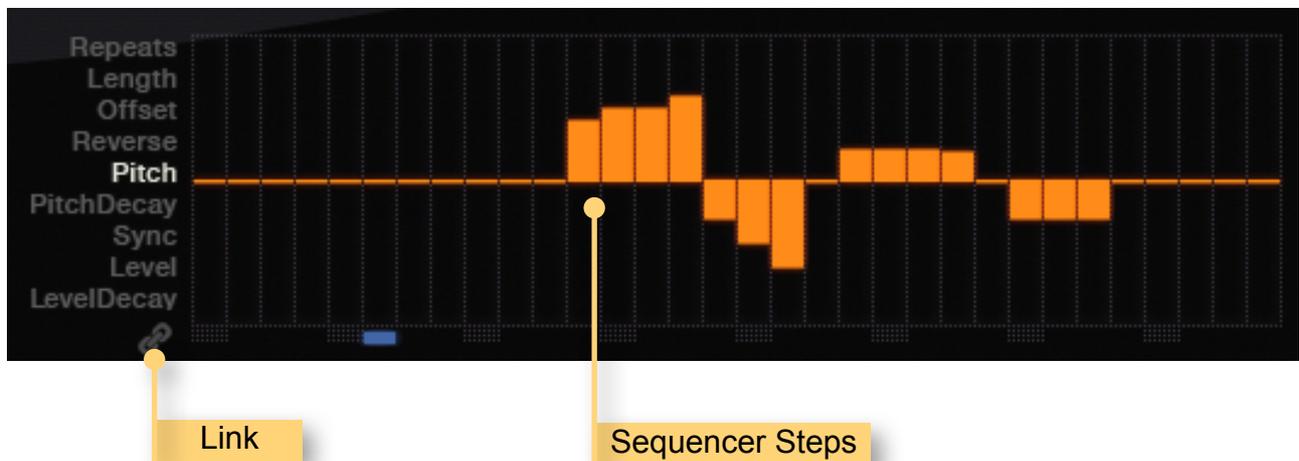
- Click on a **rotary control** and drag either upwards to increase the value, or downwards to decrease it. Hold down *shift* and drag to make smaller and more precise changes. Hold down *ctrl* and click to return the control to its default value. Rotary controls can also be changed by hovering the mouse cursor over a control and scrolling the mouse-wheel up or down.

Clicking the value beneath the rotary will allow the value to be entered using your computer's keyboard, which can often be quicker than trying to fine tune a control to a specific value. When running as a plug-in, this feature requires your host to correctly redirect key presses to the plug-in: consult your host's documentation for details.

- Click on a **button control** to toggle its value between On and Off. Hold down *ctrl* and click to return the control to its default value.
- Click on a **sequencer step** to set its value. Click and drag over a number of sequencer steps to set all their values at once. Step controls can also be changed by hovering the mouse cursor over a control and scrolling the mouse-wheel up or down.

Hold *shift* and drag a sequencer step up or down to change its value by fine amounts. Hold *ctrl* or *alt* and click on a sequencer step to reset it to its default value.

When **Link** is turned on, the steps will be tied together so that any changes to a single sequencer step will be reflected in all the sequencer steps.



## CPU Usage

The total processor resources on a computer are limited, so when Sequent increases its CPU usage, there will be less CPU resources remaining for other plug-ins and applications. CPU Usage will differ depending on which Program is currently loaded, and how that particular Program is configured.

If your CPU Usage is at 100%, 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 Program that has less CPU Usage.
- If running in Standalone mode, you can increase the latency or decrease the sample rate. See section *Setup Audio & MIDI*.
- Reduce the complexity of the current Program.
- If your host offers Freeze or Offline processing, you might be able to render the audio output in non-realtime.

### 1.3.1 Compatibility

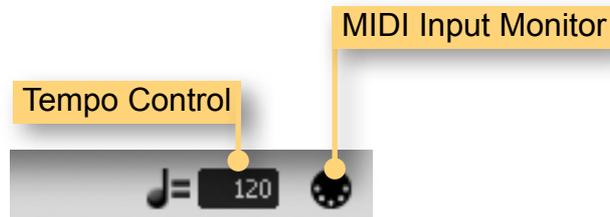
From version 1.3.2 onwards, step response on the filter, distortion, pan, and delay module parameters has been significantly reduced to allow for tighter control of sequenced automation.

Older presets, those created with Sequent 1.3.1 and earlier, will always open with "*1.3.1 Compatible Smoothing*" enabled. This change will therefore be completely transparent to saved projects. New presets will always be created with this compatibility mode disabled. You can view, as well as change, the compatibility options under the "Options" menu.

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# Status Display

Status Display information is displayed at the bottom right area of the Sequent interface:



## MIDI input monitor

The MIDI 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 Sequent.

## Tempo control

The Tempo control only appears when running Sequent in Standalone mode; when running as a plug-in, the host application will provide the tempo for Sequent. The Tempo control displays the current Tempo, in beats per minute (bpm). It can be changed by either:

- Double-clicking the tempo control, typing the required bpm and pressing return.
- Clicking on the tempo control and dragging either upwards to increase the tempo, or downwards to decrease the tempo.

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# Contact Details

## Loomer Online

Website: <http://www.loomer.co.uk>

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

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