

Operation Manual

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Preface

This is the user manual and reference guide for the Open Labs application currently known as Riff.

Manual Organization

The chapters in this User Manual are arranged as follows:

1. Introduction: information and overviews of Riff.
2. Riff Architecture: Information on the structure of the application.
3. Understanding Riff: Information and diagrams to teach you, in detail, all the windows and controls of the application.
4. Using Riff: This section will teach you how to use Riff. You will also find tutorials to help you learn how to make music with the application.
5. Appendix: This section contains a "Pro Audio Primer", which defines common terms that you will find in the Digital Audio Workstation world. Also, Appendix B lists out all the effects and instruments that are used in Riff.

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1 - Introduction

Riff is a multi-effect and multi-instrument rack for musicians and sound designers. It is also a VST host that runs as a standalone application.

Riff

Riff allows a user to stream the ASIO or VST input signal through chains of individual VST effects so you can use your PC/Open Labs Production Station as a real-time multi-effect processor.

It enables a user to play several VST instruments at the same time. You can layer several instruments to create complex sounds. Or, users may play instruments on different MIDI channels: It turns a computer into a multi-timbral sound generator.

To achieve very low latencies, the standalone version supports ASIO 2.0-compatible sound cards. It will enable users to use VST effects and instruments almost like real hardware devices.

The parameters of Riff and also parameters of the loaded VST plug-ins can be controlled through MIDI control change messages or VST automation.

Before you Begin

You should have a good working knowledge of an Open Labs workstation and a computer's operating system. For example, you will need know how to use the touch screen, touchpad, standard menus and commands. You should also know how to cut, copy, paste, open, save, and close files.

If this is your first time using any type of recording system, you may want to research the basics of Pro Audio, producing music, and MIDI recording. A good place to start is KVR Audio. (http://www.kvraudio.com/wiki/).

Also, be sure to register on the Open Labs user forum. (http://forum.openlabs.com). You can also refer to the Pro Audio Primer on page 96.

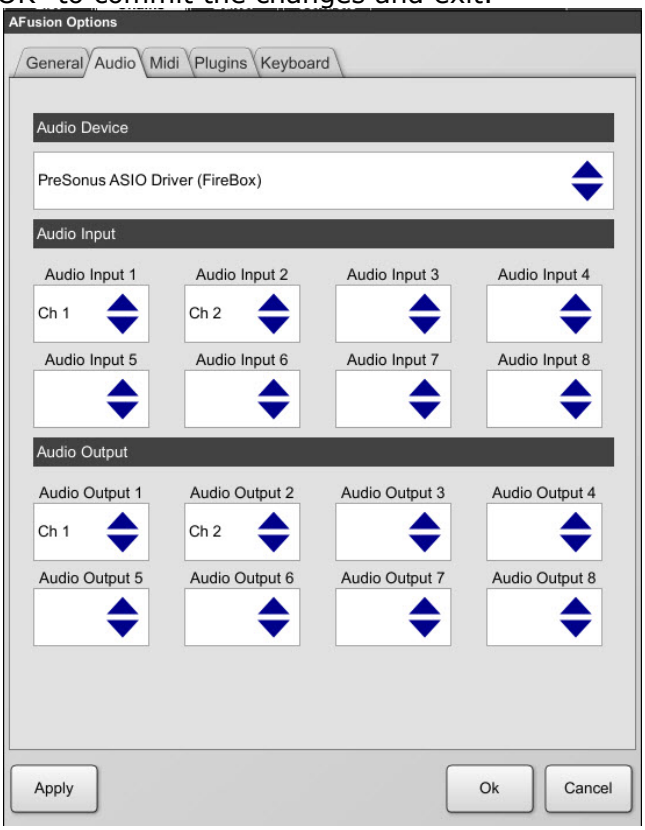
This next section will explain to you how to setup Riff after manually installing it. If Riff came stock on your Open Labs production station, you can skip this section as it will already be configured. However, if you have custom plug-in folders, you will want to read the "*Setting up your Plug-ins*" section on this page.

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Setting up the Audio

To establish a connection between Riff and your audio output hardware, you will need to select the correct software driver.

1. Select the Audio Options from the Menu>Options>Audio Options tab.
2. In the Audio Device section of this window select your ASIO sound driver (if not already selected). This is the setting that allows Riff to communicate with your audio driver.
3. Hit "Apply", then "OK" to commit the changes and exit.

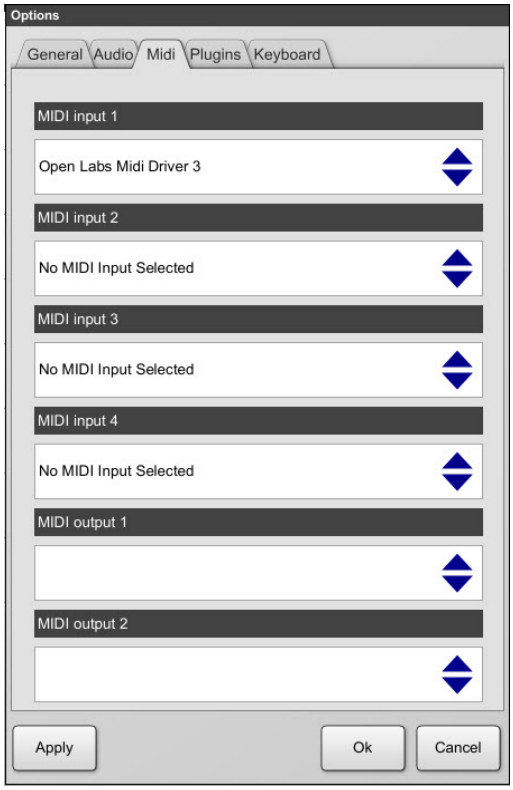


- *Audio Device*: Use this to select the primary ASIO sound driver.
- *Audio Input*: Use this to select your sound cards audio input. This application supports multiple audio input sources.
- *Audio Output*: Use this to select your sound cards audio output. This application supports multiple audio output sources.

Setting up the MIDI

To establish a connection between Riff and your MIDI driver, you will need to select the correct MIDI port. Riff allows you to select multiple MIDI-in and MIDI-out ports.

1. Select the MIDI Options from the Menu>Options>MIDI Options tab.
2. There are four MIDI input boxes. Use the "MIDI Input 1" box to select your MIDI hardware driver.
3. If your system has more MIDI ports available, use MIDI input boxes two, three and four to select those MIDI-in drivers. If you have an 88-key controller for instance, you can select the MIDI driver that device is connected to.
4. If you intend to send MIDI to an external device, use "MIDI output" 1 to select that external MIDI hardware driver.
5. Hit "Apply", then "OK" to commit the changes and exit.

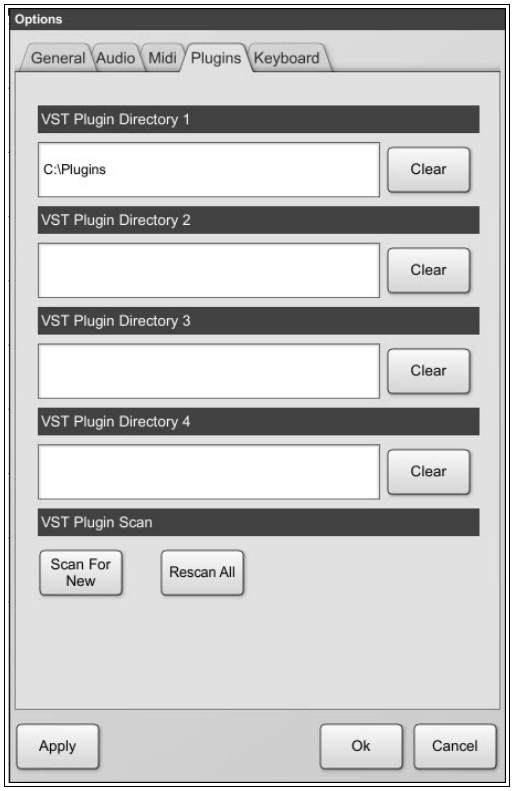


- *MIDI Input*: Use "MIDI input 1" to select your primary MIDI driver. The application also allows you to select three additional MIDI drivers.
- *MIDI Output*: Use this to select an available MIDI driver to send MIDI to an external source.

Setting up Your Plug-ins

By default, all Open Labs production station's plug-ins are located in "*C:\plugins*". With Riff, you can add four more additional locations for plugs. However, it is best to have all plug-ins in one location. To add a new plug-in folder:

1. Select the Plug-in options from Menu>Options>Plugins tab.
2. Browse to the folder where your plug-ins are located, and select it. *The default plug-in folder is "c:\plugins".*
3. Now press the "Rescan All" button. Hit "OK".



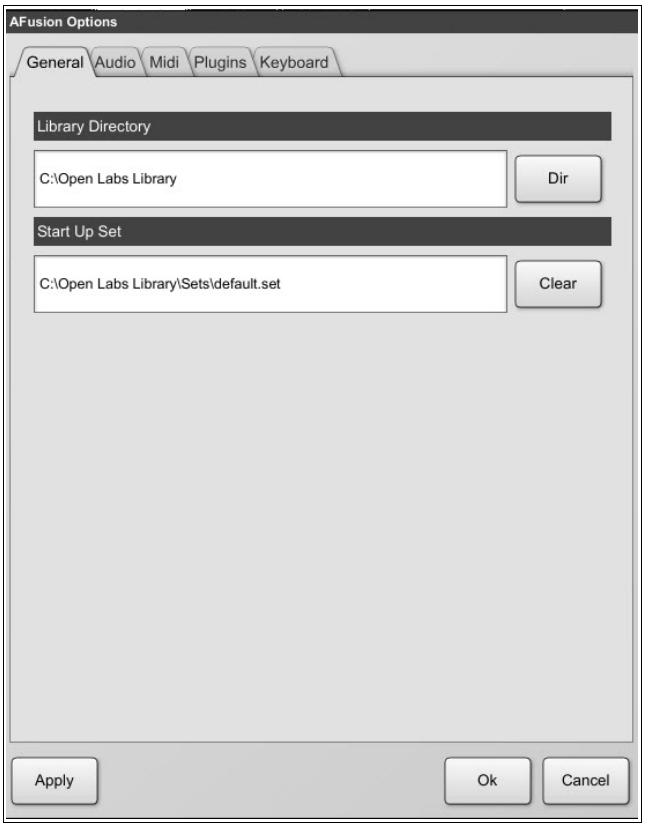
- *VST Plugin directory*: Use this window to select your main VST plug-in directory. Use the "Clear" button to reset this window. Also, we have provided you three more locations to use as VST directories.
- *VST Plugin Scan*: After adding a VST plug-in directory or directories, use either "Scan for New" or "Rescan All" to have Riff scan the folders you have added. All new plug-ins will be available after scanning. There is no need to relaunch the program.

Setting up General and Keyboard Options

The Options window contains a variety of important user-definable preferences used to configure Riff for your audio/MIDI hardware, plug-in locations, and to customize the way you work.

General

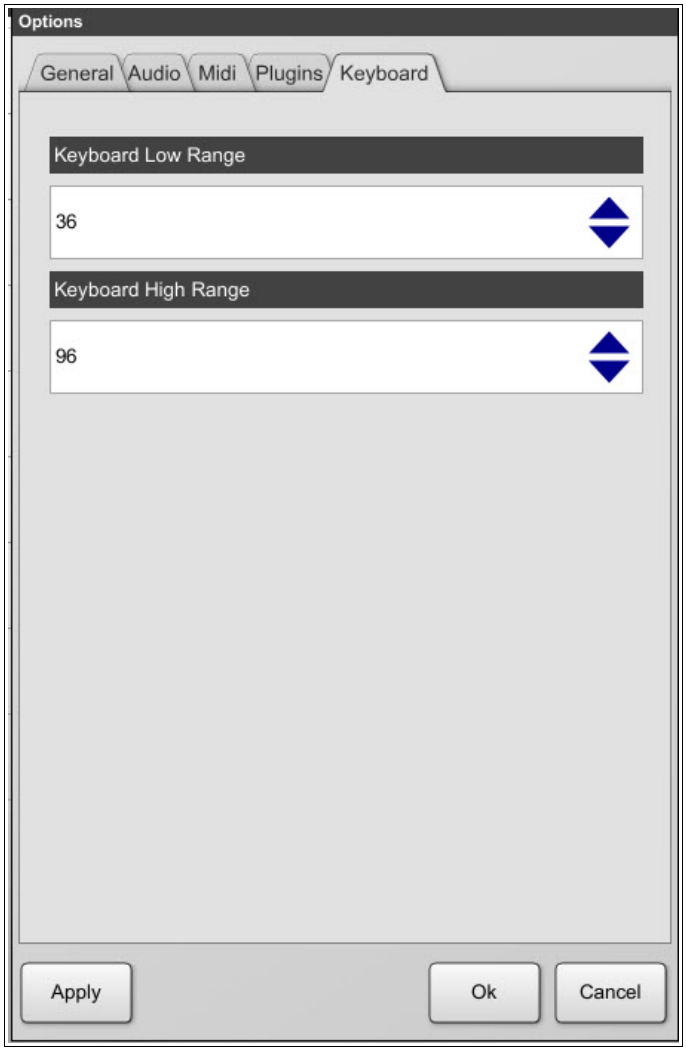
Select *Options* from the Menu>Options>General Options>General tab.



- *Library Directory*: Use the "Dir" button to browse over and select a directory to be used as the default save folder for Riff.
- *Start Up Set*: Click in this window to choose a project to be the default project that starts up with Riff.

Keyboard

To configure the Keyboard Range, select Keyboard from the Menu>Options>Keyboard Options>Keyboard tab.



- *Keyboard Low Range*: Allows you to select the low range of your keyboard. The range is 0-144.
- *Keyboard High Range*: Allows you to select the high range of your keyboard. The range is 0-144

2 – Riff Architecture

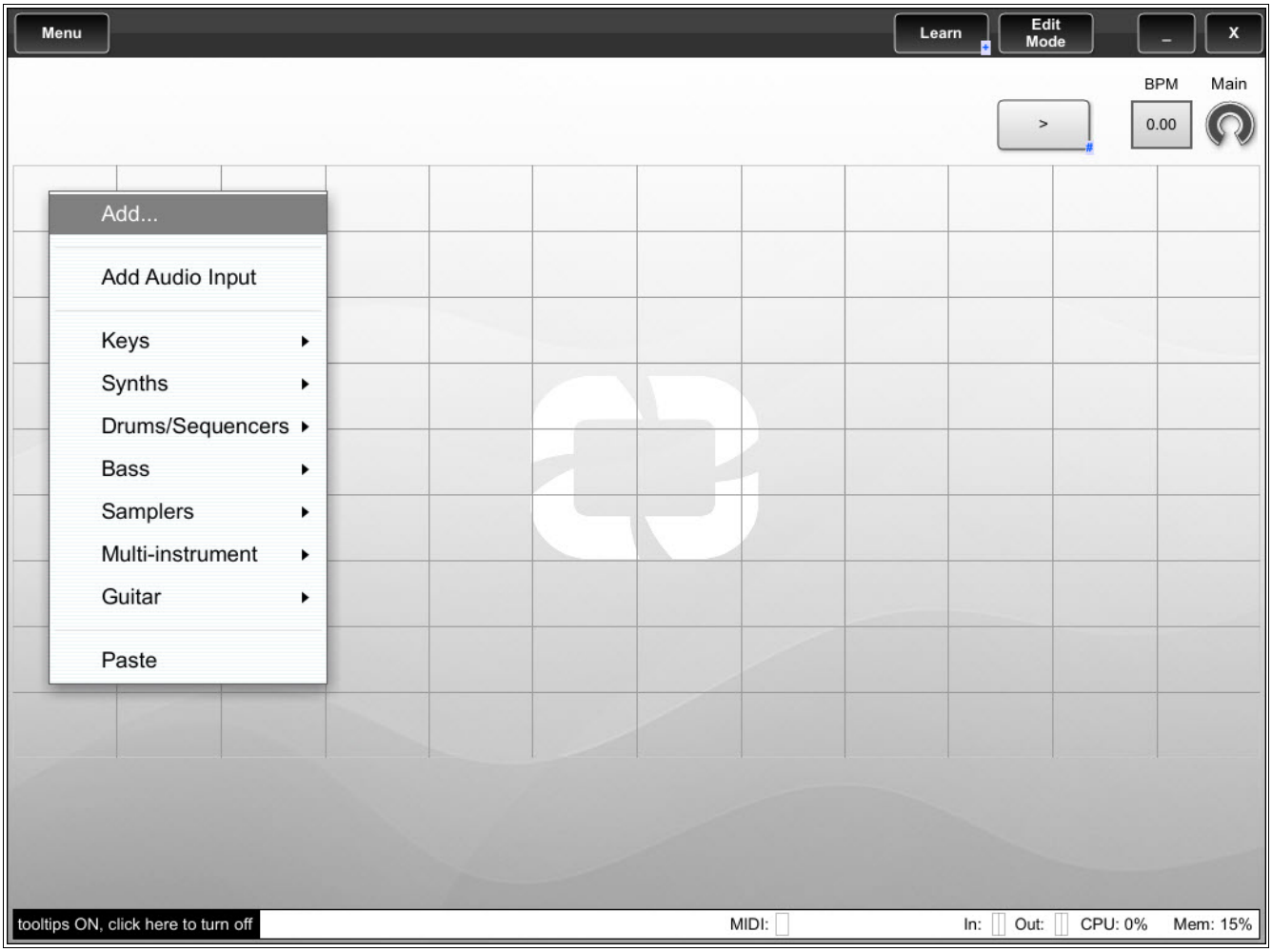
This section contains important information about the layout and organization of the various elements of Riff. This chapter contains no hands-on tutorials. However, the information here is vital to your understanding of this awesome application. *The tutorials start in Chapter 4.*

A Performance Environment

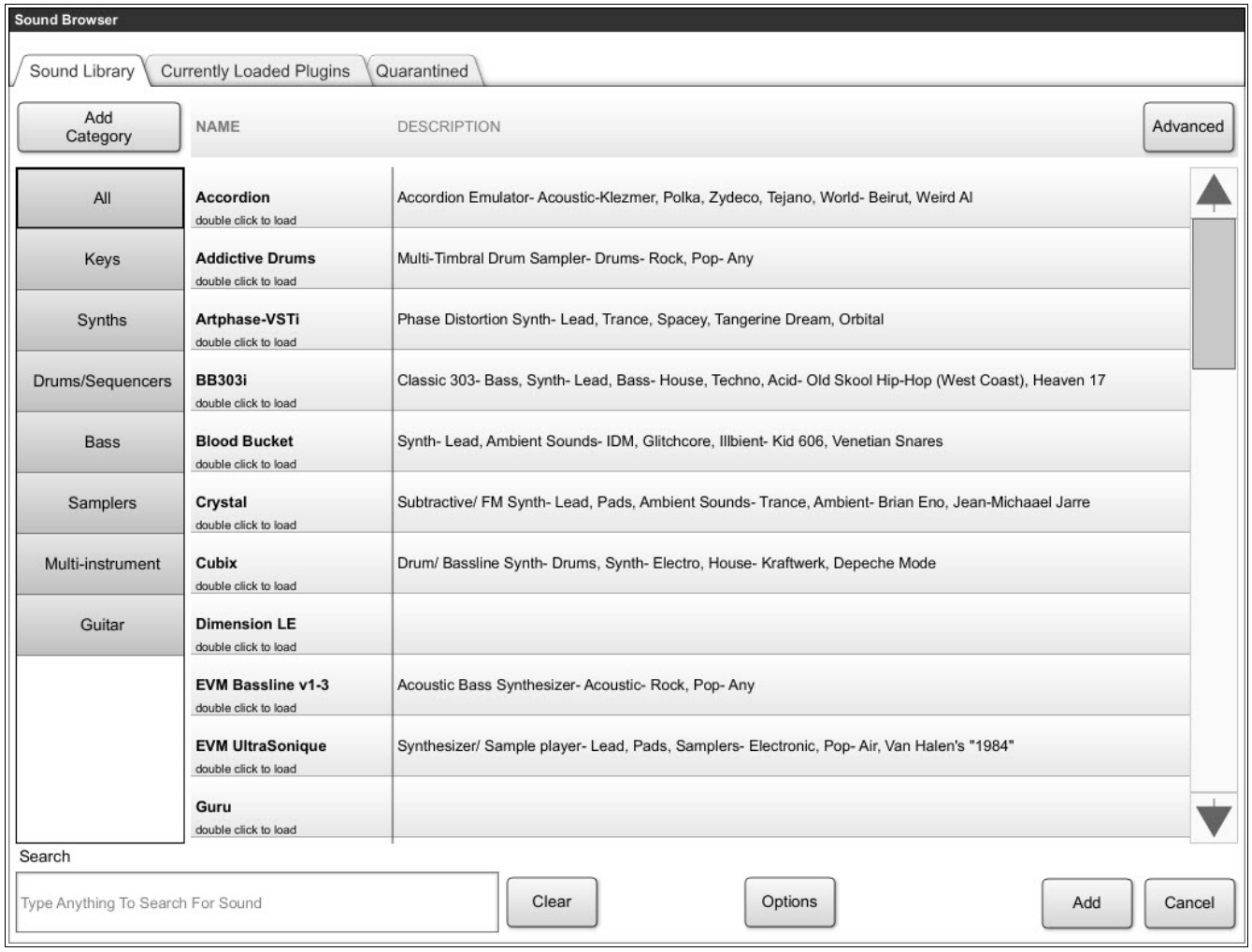
Riff is an environment to organize collections of VST sound modules, effects and performance sets. You can think of Riff as a virtual live performance rack that allows you to create effect chains, song Set Lists, and to create virtual control surfaces. By reading this section, you will gain knowledge of the Riff hierarchy starting with the Set List.

Set List Window

The Set List window is where you start, allowing you to add instruments. Once you right-click and press "Add" you will see the following windows. Each square of a Set List is called a Song.

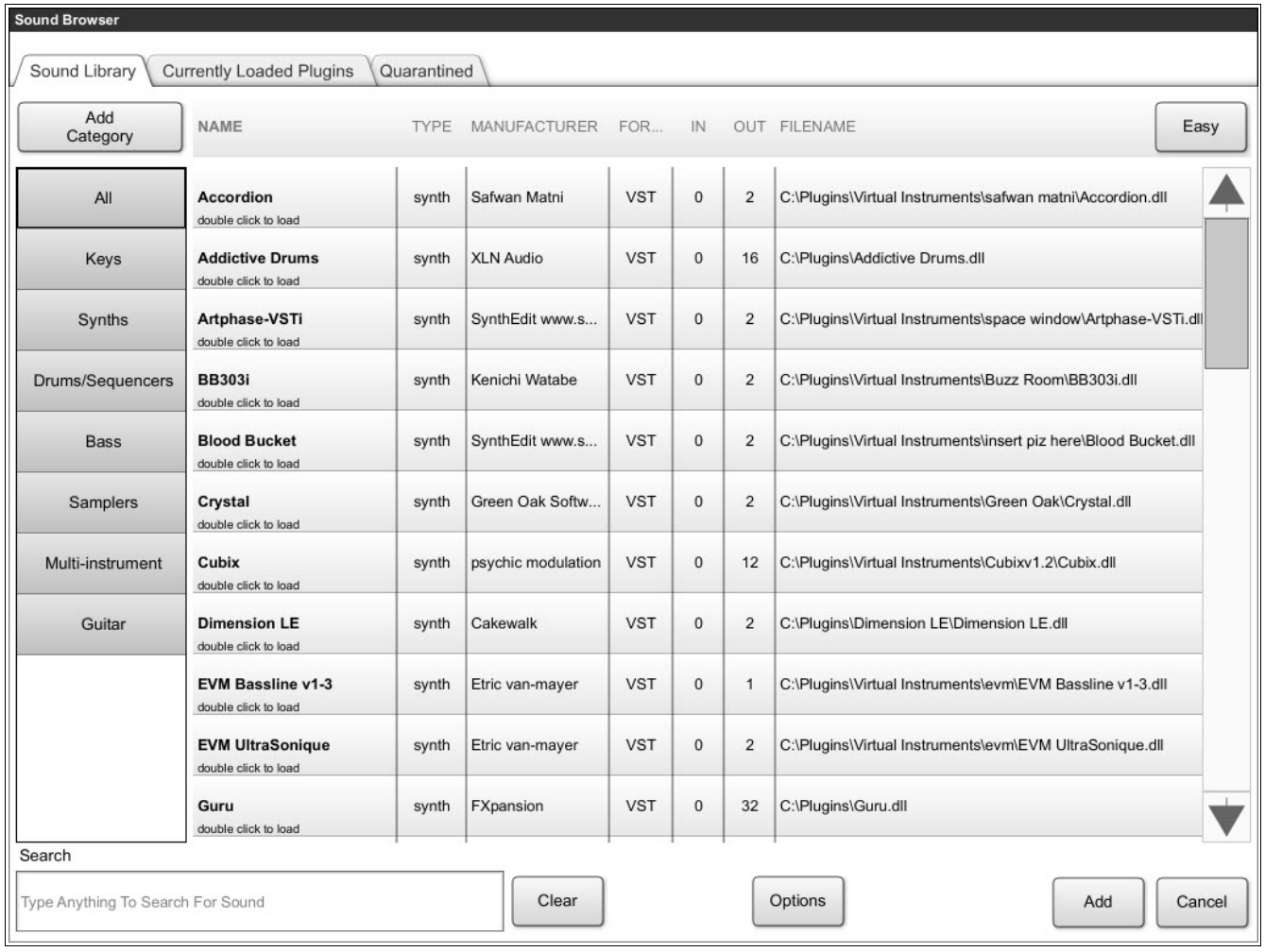


Sound Browser (Default View)

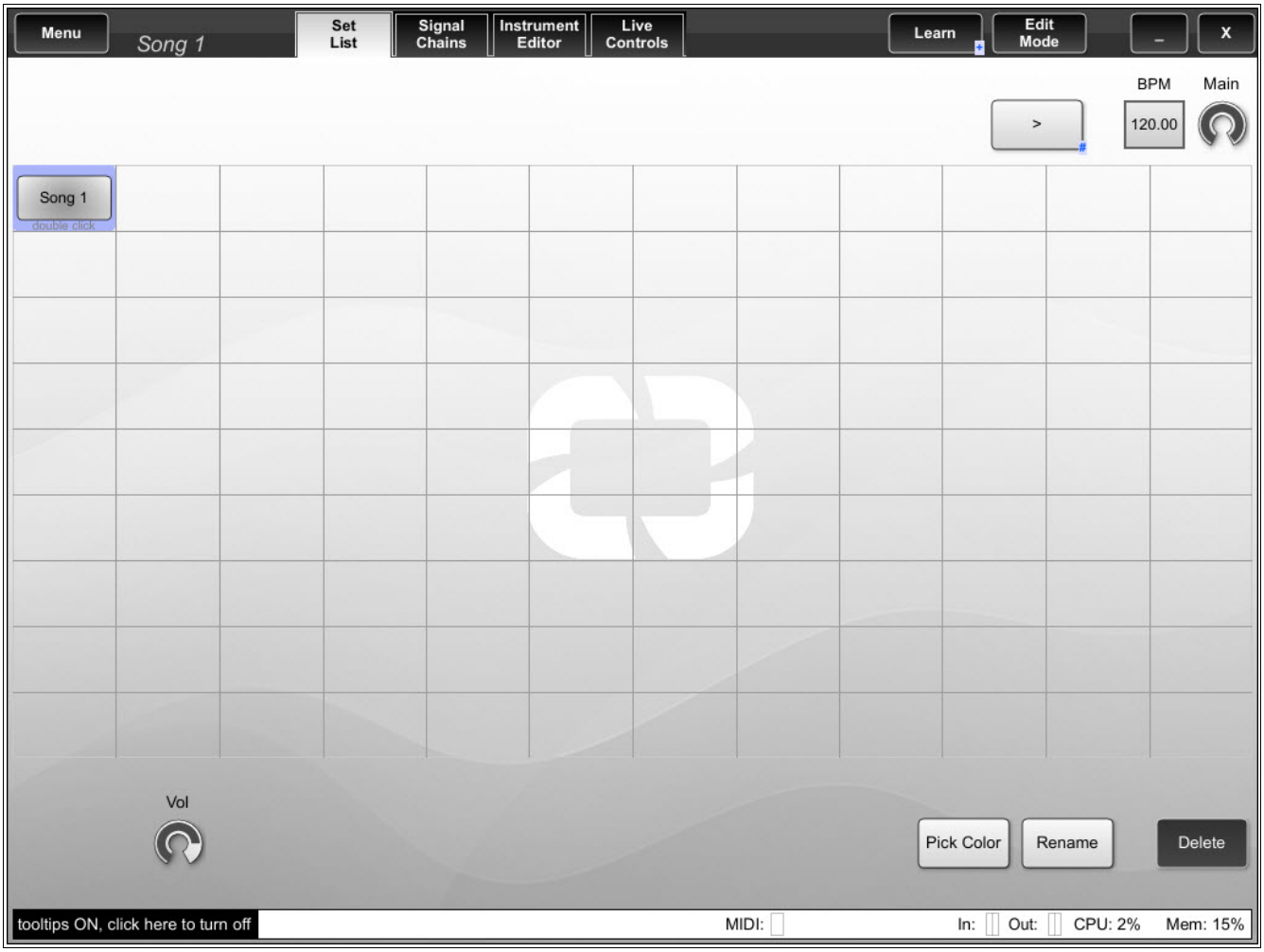


If you would like to see more details about each instrument, click the [Advanced] button in the upper left corner.

Sound Browser (Advanced View)



The Sound Browser is explained more in *Chapter 4.*



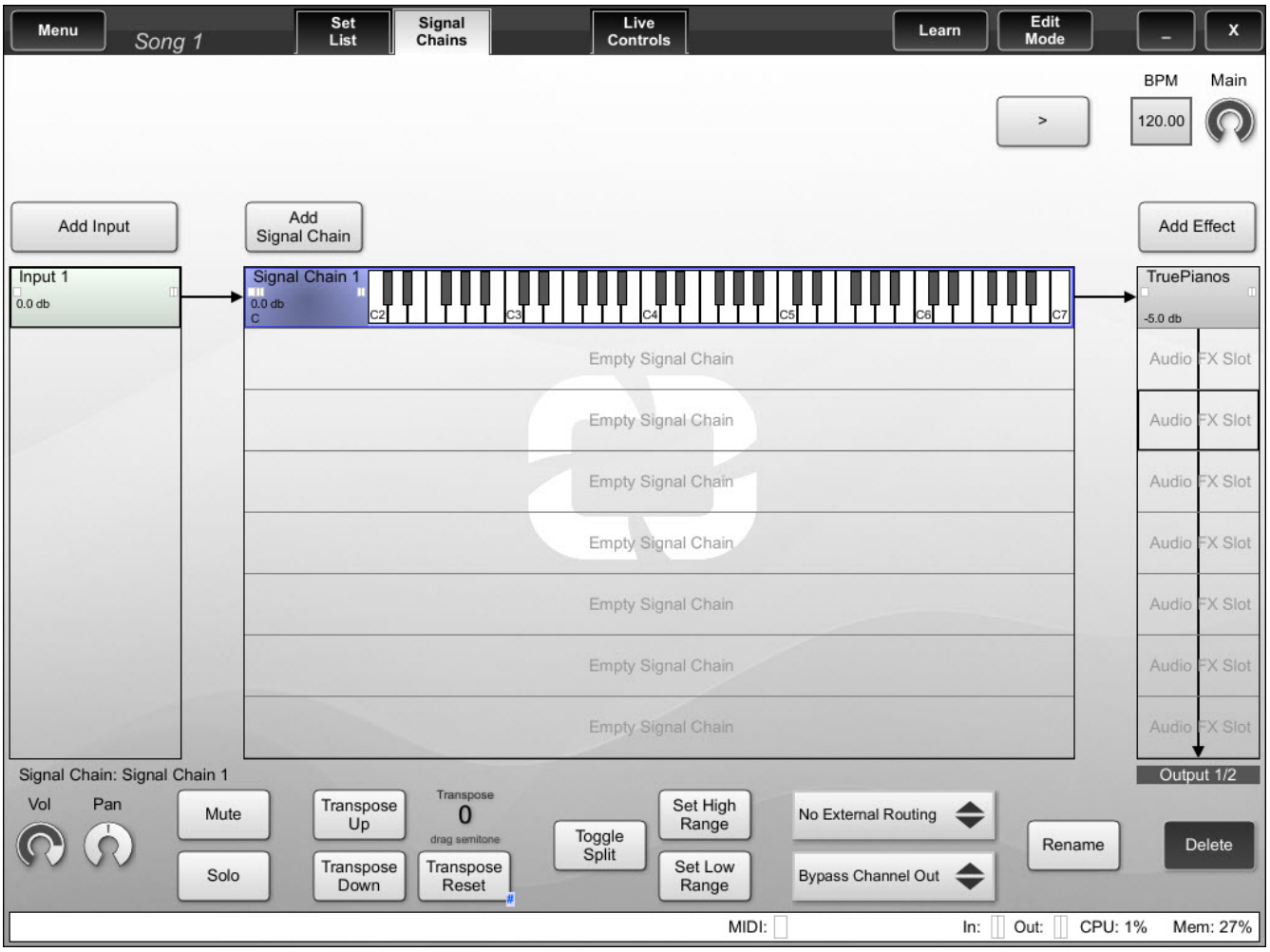
Before you can play a sound with Riff, you need to add a sound to the Set List. The Set List is grid-based and allows you to switch between Songs and sounds. You can easily see the status bar along the bottom.

There are VU meters along that bottom showing the following:

- Audio levels for input and output signal
- Meters that display the overall CPU and Memory usage of the ENTIRE system.
- MIDI activity light.

Since this window is scroll-free, you can literally play an entire show with this screen. Refer to Chapter 4 for more information on using the Set List.

Signal Chain



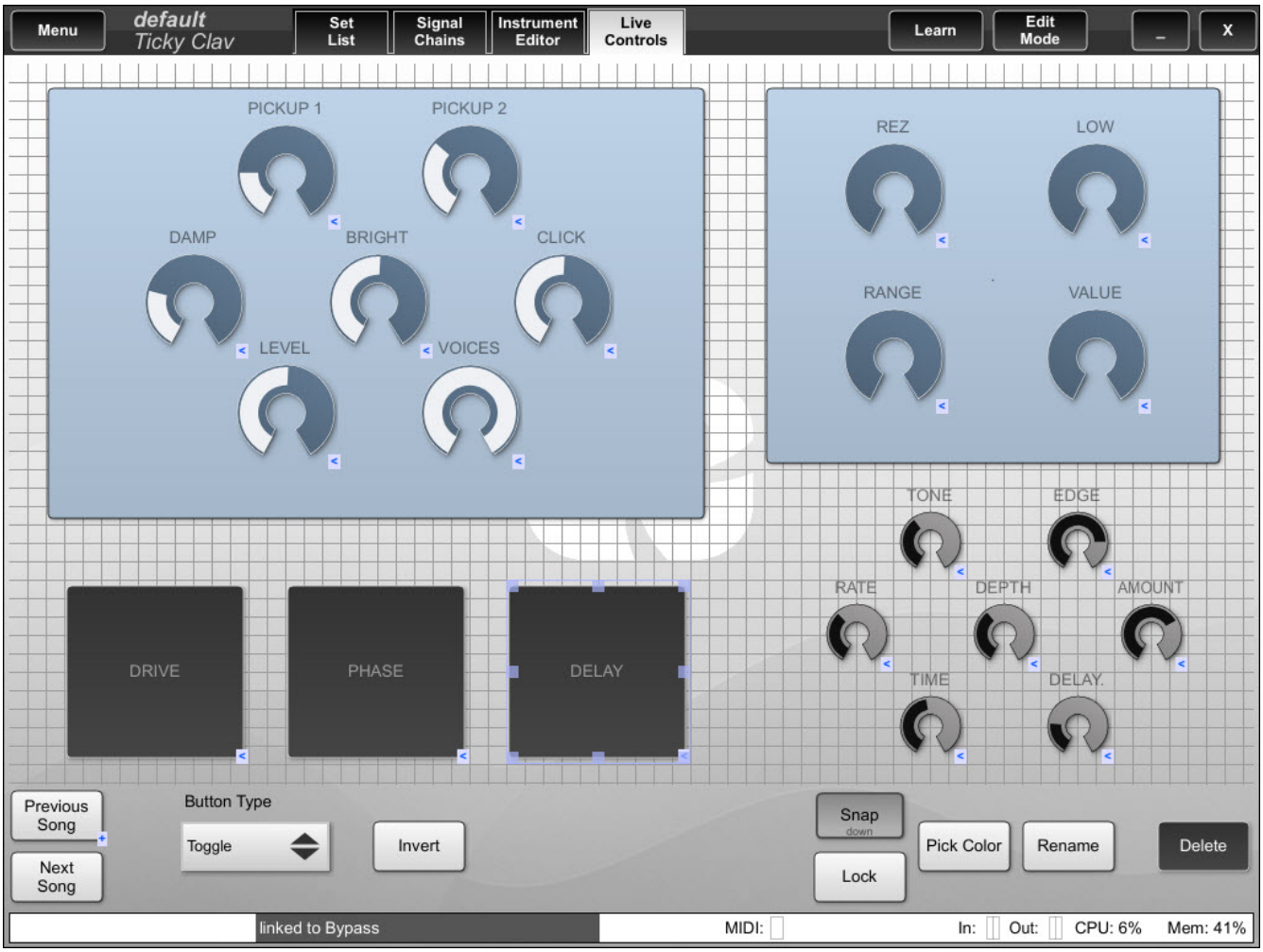
The Signal Chain is a collection of plug-ins that start with an audio input stream and end with an audio output stream. This is explained more in Chapter 3.

Instrument Editor



The Instrument Editor allows you access to a selected instrument/plug-in's graphical user interface (GUI). You can also reach the Instrument Editor screen by double-clicking the instrument in the Instrument Rack or in the Signal Chain. This is explained more in Chapter 3.

Live Controls



This is one of the most powerful features of Riff. On the Live Controls screen, you can build a custom set of MIDI controllers that can be linked to any instrument, effect, or signal chain control contained within a Song. Live controls for a Song are saved within that Song and can be easily recalled, imported or exported. This is explained more in Chapter 3.

3 – Understanding Riff

This section will begin to familiarize you with navigating around Riff. Initially, don't worry about being unsure with the controls - all will be explained.

Launch Riff

When you first launch Riff, the screen shown below appears. This Setlist is loaded with a default set. Other defaults will have different looks.

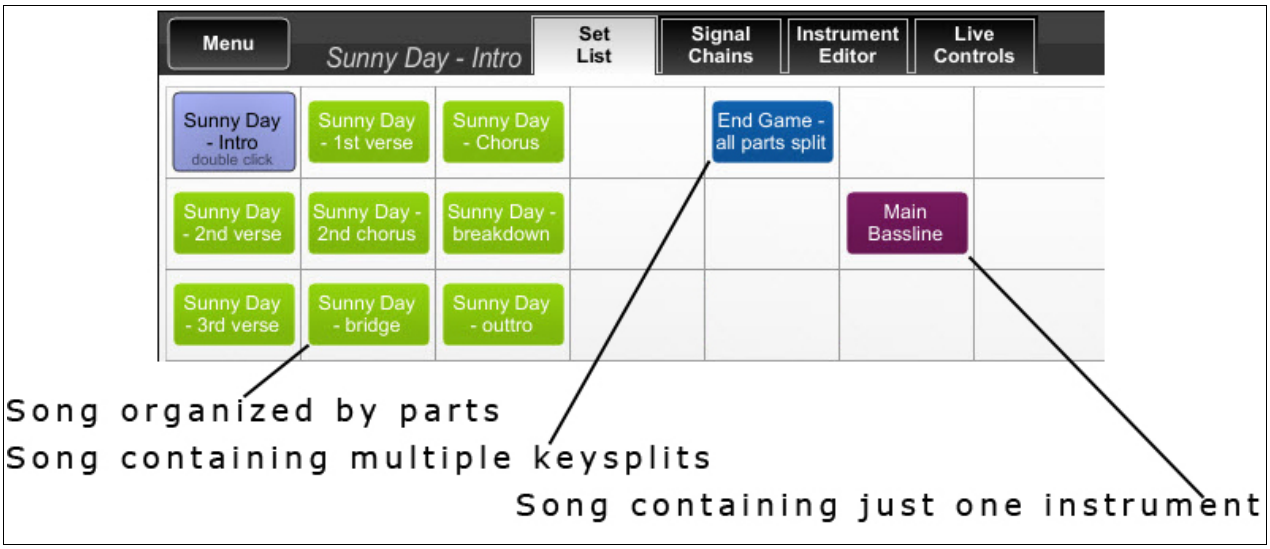
Set List



This screen is called the "Set List". **The Song Grid, Title Bar, Title Bar Controls, Status Bar,** and **Lower Section Controls** make up this screen. This window allows you to add and switch between virtual instruments. Each square of the grid is called a "Song".

Song

Use each square of the grid to create a song. A song can either be one square, or it can be a group of squares to create all the parts for the song you are playing. As shown in the example below, using the song grid you can arrange songs into a structure, rename and color code them for easy organization.



Each song is not just limited to one instrument. Once you go into the signal chain of each song square, you have tons of options, like creating keyboard splits and adding VST effects. *Refer to the section regarding the Signal Chain for more information.*

Title Bar

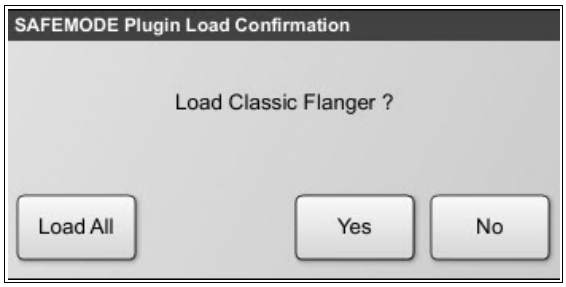
The Title Bar is the area of Riff that contains the programs control menu items. Items include: Menu, Set List, Signal Chain, Instrument Editor, and Live Controls.



<u>Menu Bar</u>

- File
  - New Set
    - Creates a new Set from scratch.
    - Launches a confirmation dialog, because creating a new Set will eliminate current one.
    - If the user does want to make a new Set, and the current Set hasn't been saved, then you will be prompted to save the current Bank.
  - Open Set
    - Opens the Set List Dialog.
  - Open Recent Set
    - Lists recently accessed Sets. Selecting from here will launch the selected set and will trigger the same confirmation as the New Set dialog.

- Open Set in Safemode...
  - Safemode is a simple way of diagnosing a problematic Set. You can choose whether or not to allow an instrument or effect to load.



- Save Set
  - If no changes have been made to a Set, this is grayed out.

- Save Set As...
  - Choose this to save your Set with a custom name.

- Import – *Allows the importing of the following items to a currently opened project.*
  - Import Song
  - Import Input
  - Import Rack
  - Import Signal Chain
  - Import Live Controls
  - Import FXP (Program)
  - Import FXB (Bank)

- Export – *Allows the exporting of the following items.*
  - Export Song
  - Export Input
  - Export Rack
  - Export Signal Chain
  - Export Live Controls
  - Export FXP (Program)
  - Export FXB (Bank)

- Exit
  - Exits Riff

- Edit
  - Cut, Copy, & Paste items to and from the clipboard

- Options
  - Options
    - Launches the Options dialog.
    - Lists all the Audio, MIDI, Plugin, General, and Keyboard options in one dialog.

- Help
  - Open Help
    - Opens the Riff Help File.

  - About
    - Displays the information regarding the build version of Riff.

Title Bar Controls



Learn
Switches the host into MIDI Learn Mode. Here, you can latch live controls to VSTi's. There are two types of Learn available in the host.

- Learn – Ties knob to a specific controller.
- Learn Relative – Enables you to map a controller to a common parameter, like the volume knob of multiple songs or signal chains.

Edit Mode/Live Mode
In Edit Mode a user can move around Songs, arrange them, set the properties of the Banks and create tabs. It is just a way for the user to lock down the interface.

When in Edit Mode here are a few things you can do:

- Create a new Song
- Import/Export sets
- Build a Signal Chain
- Create and Map Live Controls

When in Live Mode the following restrictions apply:

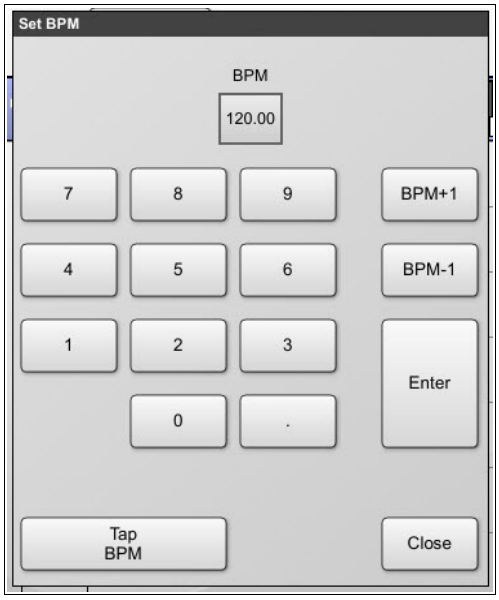
- No editing of live controls parameters except setting low and high
- No right-click menus anywhere
- No adding or removing Banks
- No adding or removing Instruments / Signal Chains

Minimize
Minimizes Riff

Close
Exits Riff

Play Button
This button toggles between play and stop. This is for instruments that have built in sequencers (Guru, Stylus RMX, or Reaktor for instance) and effects that are tempo synced.

BPM
This is the control for the global tempo. (*BPM = Beats Per* Minute) Pressing The box under "BPM" brings up the BPM input window.



Main - Volume Knob
Overall Master output volume knob of the host

- Can be dragged up or down to change value
- Ctrl + Left-click restores default (This applies to all knobs in Riff)
- *Right-clicking here only brings up "Learn" mode*

Lower Section Controls



Previous and Next Song
When you have more than one song on your setlist, the Previous and Next song buttons will appear. These allow you to go to the next song of your set. They can be MIDI learned to a surface control.

Vol(Volume)
This volume knob controls the volume for the individually selected song. It is independent from the Main Volume control.

- Right-clicking on the volume knob brings up Learn Mode.
- Learn – Ties the Vol knob to a specific controller
- Learn Relative – Ties the Vol knob to a controller but stays latched to the control volume on the selected preset. Whatever preset is in focus will have its volume controlled

Pick Color
Brings up the Color Picker dialog box. Here, the user can select the color choice for the preset.

Rename
This button allows you to rename the preset.

Status Bar



Tooltips
Tooltips will display info on what is being selected. Also, tooltips will show the numerical value of a changed parameter, as well as the name and brief description of the controls as they are moused-over.

Audio VU Meter
The Audio VU meter shows the signal for the master output bus. By default, this will show outputs one and two. This can be changed to show whatever outputs you are using.

MIDI Indicator
The MIDI Indicator shows whether Riff is receiving MIDI from any MIDI controllers. It also displays the note/MIDI value.

CPU
CPU monitors the current processor usage of the entire system. Not just the program.

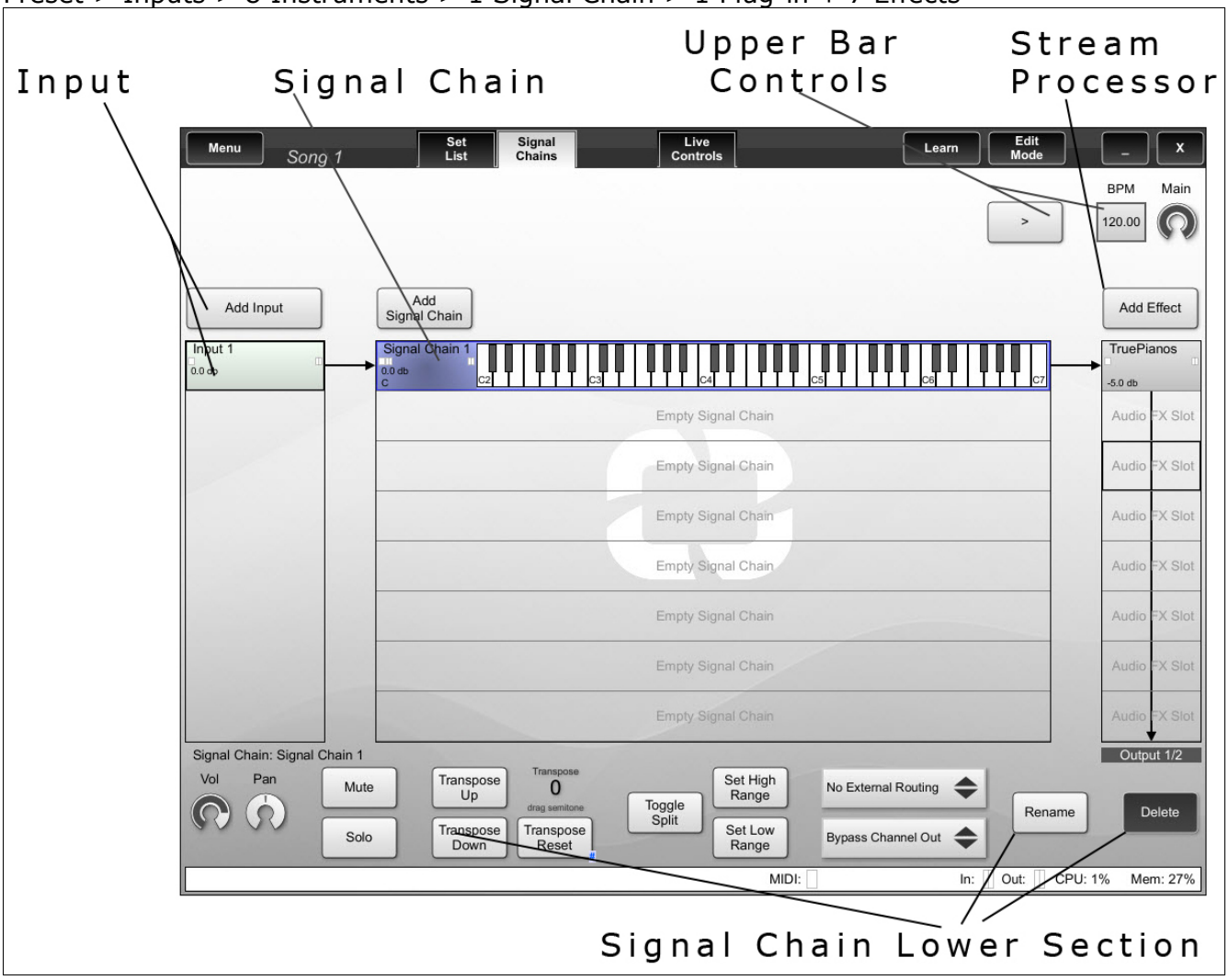
- Displays the usage in percentages.

MEM
MEM displays the physical memory usage of the entire computer system.

Signal Chain

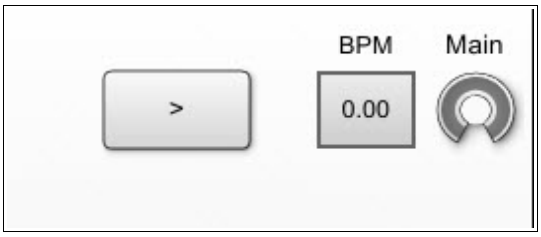
This is the main window where instrument racks and effect chains are created and managed. These are the components that comprise the Presets from the Song/Set grid pages. Each of the Song buttons on the Song/Set Grid page has a Signal Chain. Moving from left to right, each Track is composed of up to 8 instruments. Each Instrument can have up to seven effects added to it.

Preset > Inputs > 8 Instruments > 1 Signal Chain > 1 Plug-in + 7 Effects



Upper Bar Controls

The Upper Controls are located above the Stream Processor and below the Title Bar.



- *Play Button* – This button toggles between play and stop. This is for instruments that have built in sequencers (Stylus RMX, or Reaktor for instance) and effects that are tempo synced.
- *BPM* – This is the control for the global tempo. (*BPM* = *Beats Per* Minute) Pressing The box under "BPM" brings up the BPM input window. As shown in the window on page 21.
- *Main* – Master output volume knob of Riff.

Input

- *Add Input* – This allows for an Input to be created with a signal chain containing a VSTi, or an empty signal chain with no VST. In order to use the VSTi's and play them, an Input must be selected with the desired plug-in.

Input Column Controls



The lower section of the screen shows the controls for the Input Column. Those controls are:

- *Vol* – Volume control for the Input. All instruments and their signal will be affected.
- *Monitor* – Allows you to monitor the Open Labs Keyboard, pad module, or external MIDI device.
- *Input / Output* - Brings up the MIDI I/O window.
- *Rename* – Renames the currently selected Input
- *Delete* - Deletes the currently selected Input

The lower section of the screen shows the controls for the Rack Column. Those controls are:

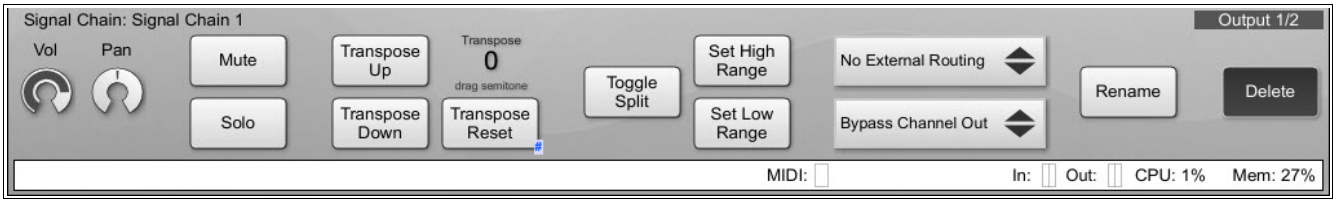


- *Vol* – Volume control for the Rack. All instruments and their signal will be affected.
- *Mute* – Mutes the Rack. All instruments and their signal chains will be affected.
- *Solo* - Solos the Rack and mutes all other Racks.
- *Audio Output* - Allows you to route a rack to a particular separate output.
- *Rename* – Renames the currently selected Rack.
- *Delete* - Deletes the currently selected Rack.

Signal Chain

- *Add Signal Chain* – Accesses the Sound Browser, where you can select a plug-in and add it to the Instrument rack. Up to eight instruments can be added per Track.

Signal Chain Column Controls



The lower section of the screen shows the controls for the Signal Chain Column. Those controls are:

- *Vol* – Volume control for the Signal Chain. All instruments and their signal will be affected.
- *Pan* – Pan control for the Signal Chain. All instruments and their signal chains will be affected.
- *Mute* – Mutes the selected Signal Chain. All instruments and their signal chains will be affected.
- *Solo* - Solos the Signal Chains and mutes all other Signal Chains
- *Transpose Up* - Transposes notes sent by one octave up.
- *Transpose Down* - Transposes notes sent by one octave down.
- *Transpose Reset* - Resets any transposed notes back to zero.
- *Toggle Split* – Allows you to open or close any keyboard splits you have created.
- *Set High Range* - Selecting this button brings up the Learn High Range dialog box prompting the user to select the MIDI note that will be the highest note sent to the instrument. The user hits the key on the Ivory keyboard and the high ceiling is set. The change will immediately be seen on the keyboard layout on the Instrument rack.
- *Set Low Range* - Selecting this button brings up the Learn Low Range dialog box prompting the user to select the MIDI note that will be the lowest note sent to the instrument. The user hits the key on the Ivory keyboard and the low is set. The change will immediately be seen on the keyboard layout on the Instrument rack.
- *Signal Chain Router (External Routing)* – Quickly allows you to change MIDI channels and to inter-route between other Signal Chains. It also creates multiple key splits from one multi-timbral instrument.
- *MIDI channel selector (Channel Out)* – Use this to create a MIDI channel output for the selected signal chain. This is used when working with multi-timbral synths and external MIDI devices.
- *Rename* – Renames the currently selected Signal Chain.
- *Delete* – Deletes the currently selected Signal Chain.

Stream Processor

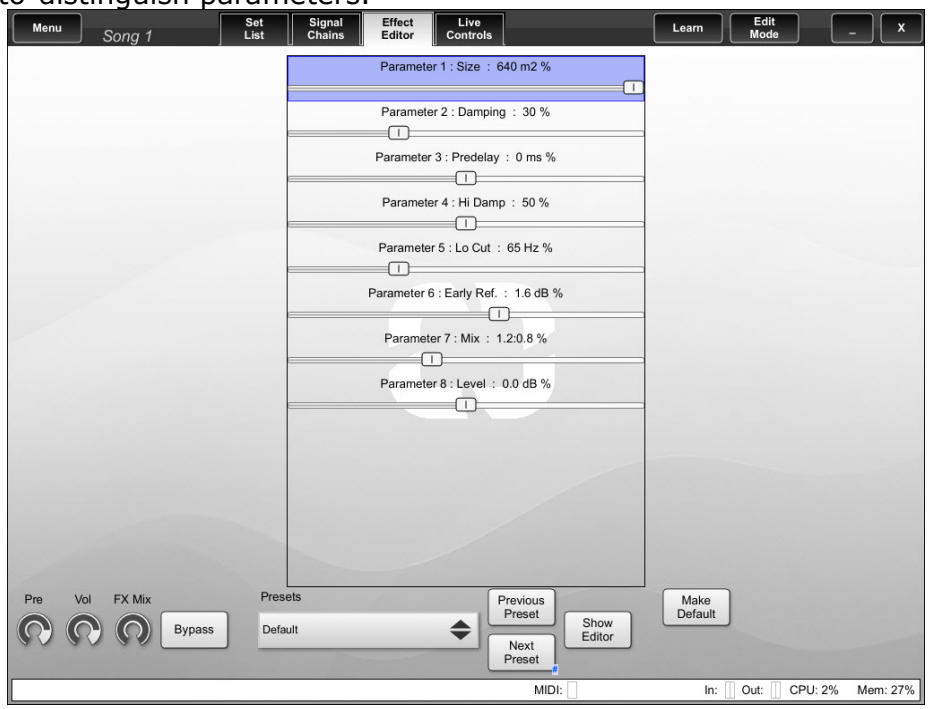
- Add Effect – Brings up the plug-in browser, where you can select an effect to add to the signal chain. Audio is processed from top to bottom, and effects can be switched around in order to change their routing. Typically, the first slot is used for an instrument, while the plug-ins that are below it affect its sound. The user can also load MIDI effect. These are plug-ins that output MIDI rather than audio. These are placed above the sound generating plug-in so that it can pass MIDI. Riff will not allow illogical configurations, (e.g. Sound generating plug-in, followed by a MIDI VST, followed by an effect followed by another sound generator).

Once you add an effect, you will get a new tab on the Title Bar called "*Effect Editor*".

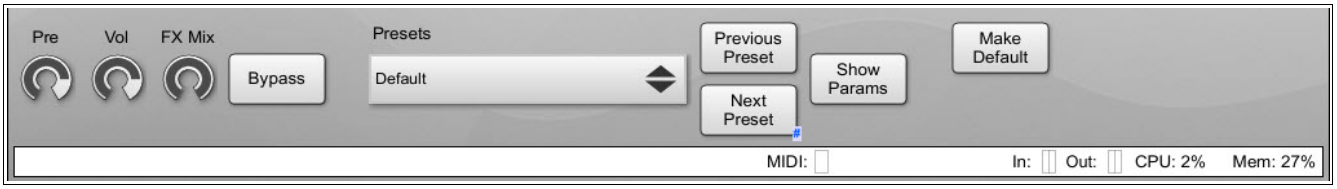
Selecting the “Effect Editor” will bring up the GUI of that effect:



If an instrument or plug-in is selected, you can access the list of the parameters for the plug-in by clicking the “Show Params” tab on the Instrument Editor lower control screen. The last touched control on the plug-in will be highlighted on the Params page. This is helpful for locating hard-to-distinguish parameters.



This is a list of the raw parameters of an effect. This will also display parameters that might not be accessible from the plug-in GUI.
Effect Column Controls



The lower section of the screen shows the controls for the Effect Column. Those controls are:

- *Pre – Pre control: Controls the input into the selected Audio FX.*
- *Vol* – Controls the output of the selected Audio FX.
- *FX Mix* – Controls the wet/dry mix.
- *Bypass* - Bypasses the output of the effect.
- *Presets* - A drop-down box that allows you to quickly browse through preset sounds. Displays the list of the Presets contained within the synth. Touching the Preset name will expand the list into a scrollable list where a new preset can be selected
- *Previous Preset* – Selects the previous preset in the list.
- *Next Preset* – Selects the next preset in the list.
- *Show Params* – Shows all the VST parameters without the GUI making it easier to find and change certain parameters. You can switch between a GUI and non-GUI.
- *Make Default* – Locks user created parameters as the default setting. This only applies to the selected Song. Loading another instance of the VSTi will not load with this as the default setting. The only exception to this of course is "Shared Instruments".

Instrument Editor

If an instrument or plug-in is selected, you can access the GUI by clicking the Instrument Editor tab on the Title Bar. Also, you can reach the Instrument Editor screen by double-clicking the instrument in the Instrument Rack or in the Signal Chain.



Instrument GUIs larger than 1021x727 will display horizontal and vertical scroll bars. The controls along the bottom are very similar to the controls seen on the Signal Chain tab. Any MIDI settings learned here will be the same as the ones set on the Signal Chain tab.

- *Vol* – The volume here basically controls the amount of output that is sent to the next effect in the Signal Chain. It is independent of the Vol control for the Instrument in the Instrument Rack
- *Transpose Up/Transpose Down* – Transposes notes sent by one octave up or one octave down.
- *Presets* – Displays the list of the Presets contained within the synth. Touching the Preset name will expand the list into a scrollable list where a new preset can be selected.
- *Prev Preset/Next Preset* – Navigates through the Preset list. Can be Learned or Relative Learned.
- *Show Params* – This button brings up the parameters view of the current plug-in. Clicking it again switches back to the plug-in's GUI. *Refer to the next page for an example.*
- Make Default - Locks user created parameters as the default setting for the selected song.

Instrument Params

If an instrument or plug-in is selected, you can access the list of the parameters for the plug-in by clicking the Show Params tab on the Instrument Editor lower control screen. The last touched control on the plug-in will be highlighted on the Params page. This is helpful for locating hard-to-distinguish parameters.



This is a list of the raw parameters of an Instrument. This will also display parameters that might not be accessible from the plug-in GUI. The Lower control section is the same as the Instrument Editor tab.

- *Show Editor* – Pressing this button will take you back to the Instrument Editor screen.

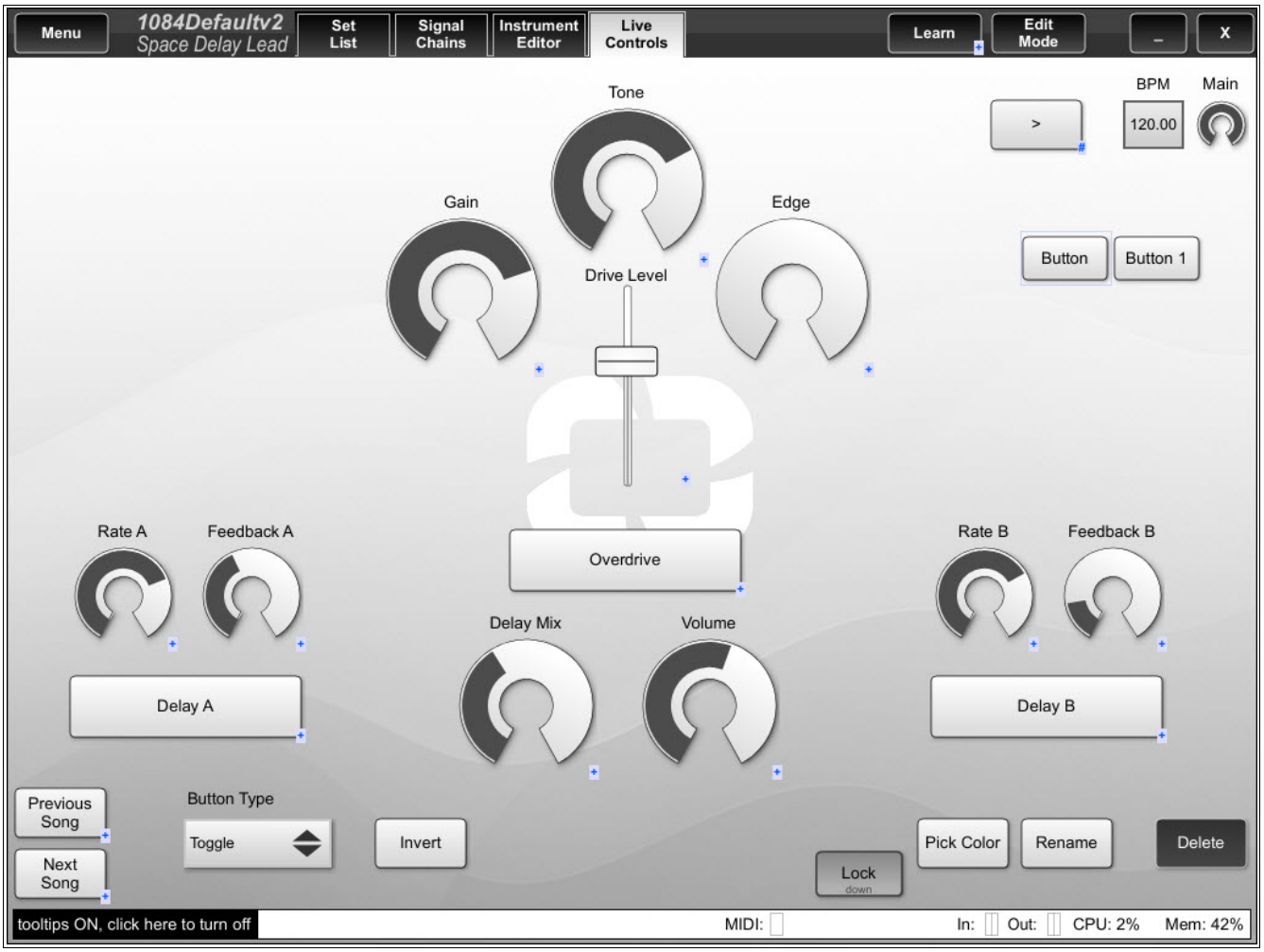
Exporting and Importing User Patches

If you tweak out a patch in an instrument, you can export that setting by going to *Menu>File>Export>Export FXP (Program)*. This also applies to Banks. Except you would pick *Export FXP(Bank)* instead.

Live Controls

This is one of the most powerful features of the host. On this screen you can build a custom set of MIDI controllers that can be linked to any Instrument, Effect, or Signal Chain Control contained within a Preset from the Song Grid. Live controls for a preset are saved within that preset and can be easily recalled.

The Edit Mode toggle button toggles the Live Control screen between Edit mode and Live mode. In Edit mode a user can add, remove, resize and edit the properties of the Live Control. Each Live Control can be mapped to a plug-in parameter, just like a real hardware control. In Live Mode a user cannot add, remove, resize and edit the properties of the Live Control.



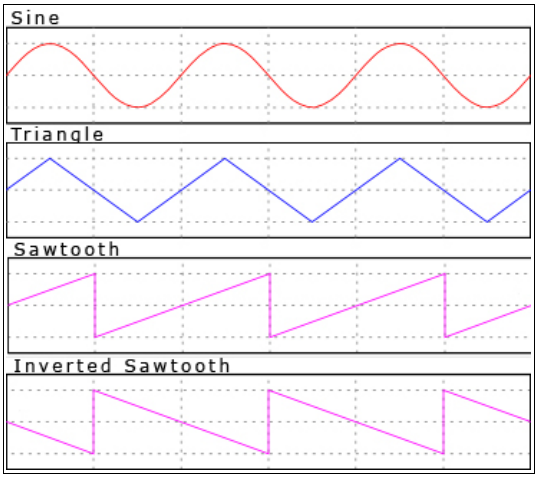
A left-click, right-click or a touch via the touchscreen on an empty space will bring up the "Add" menu. You can add a **Knob**, **Button**, **Horizontal Slider** (Crossfader), **Vertical Slider**, **XY Pad,** and a **Text Editor**.

Knob Properties/ Horizontal Slider Properties/ Vertical Slider Properties



- *Invert* – This option allows you to invert the Virtual Live Control. This comes in handy when working with VST's that have reversed buttons to bypass.
- *Low* – Sets the low boundary of a knob or slider.
- *High* – Sets the high boundary of a knob or slider.
- *Oscillator Type* - The knob can be made to self oscillate. Below is a listing of the Oscillator types.

    - *Sine - A sine wave is often thought of as the most simple or pure wave because it possess only one harmonic and is a smooth wave.*
    - *Triangle – A triangle waveform that rises quickly to a particular amplitude, then quickly drops.*
    - *Saw - The sawtooth wave (or saw wave) is named a sawtooth based on its resemblance to the teeth on the blade of a saw. Sawtooth waves ramps upward as time goes by and then sharply drops. However, there are also sawtooth waves in which the wave ramps downward and then sharply rises.*
    - *Inverted Saw* – Inverts the Sawtooth wave type. Inverted Saw *waves ramps downward and then sharply rises.*



- *Time* – Choose the rate of oscillation by adjusting this knob.
- *Offset* - Offsets the starting point of the oscillation dependent on the clock of the host. This is used to make knobs/sliders hit their high/low ranges on different beats. Like on a 16th or 8th or any desired beat.
- *Use BPM* - This button allows you to sync the knob/slider with Riff's BPM.
- *Use Sequence* - You can latch the oscillators to start with the play button of the host and any other sequencer that has been synced to the host. When you hit play the oscillators start oscillating along with a sequencer (if you have put it to sync with the host). *This only applies to the selected live control.*
- *Snap* – Snap live controls to a grid.
- *Lock* – This will lock down all the live controls making them operable. This is similar to live-mode but still allows you to edit the live controls, with the exception of resizing them.

Button Properties



- *Button Type* - The options are Toggle (On/Off) and Momentary(Trigger)
    - *Toggle* – When set to toggle, a button remains on until you press it again. Hence On/Off.
    - *Momentary* – When set to Momentary, a button triggers when pushed and releases the trigger when released.

- *Invert* – This option allows you to invert the button function. This comes in handy when working with VST's that have reversed buttons to bypass.
- *Lock* – This will lock down all the live controls making them operable. This is similar to live-mode but still allows you to edit the live controls, with the exception of resizing them.

XY Pad Properties



- *Low X/ High X* – Sets the low and high ranges for the X axis on the XY pad.
- *High Y/ High Y* – Sets the low and high ranges for the Y axis on the XY pad.

Text Properties

Creates a box the user can use for typing notes, text or labeling in. For instance, the name of the song or special tricks for that individual song.



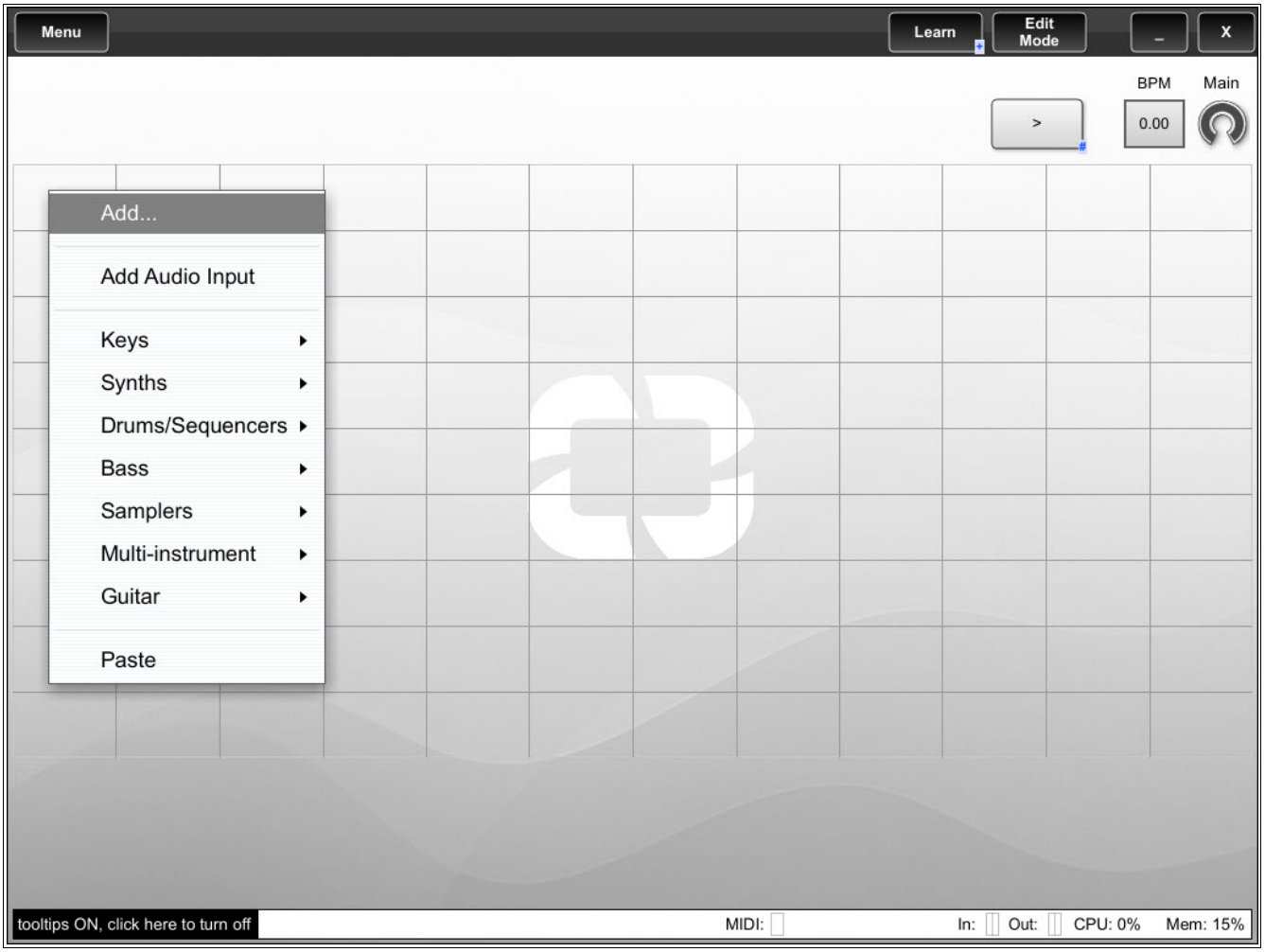
- *Edit Text* – This allows you to input the actual text to be displayed when in live mode.
- Lock – This will lock down all the live controls making them operable. This is similar to the live-mode but still allows you to edit the live controls, with exception of resizing them.
- *Pick Color* – Brings up the Color Picker dialog box. Here, the user can select the color choice for the text.
- Delete – Deletes the currently selected Virtual Live Control.

4 – Using Riff: Tutorials

Using the Song Grid

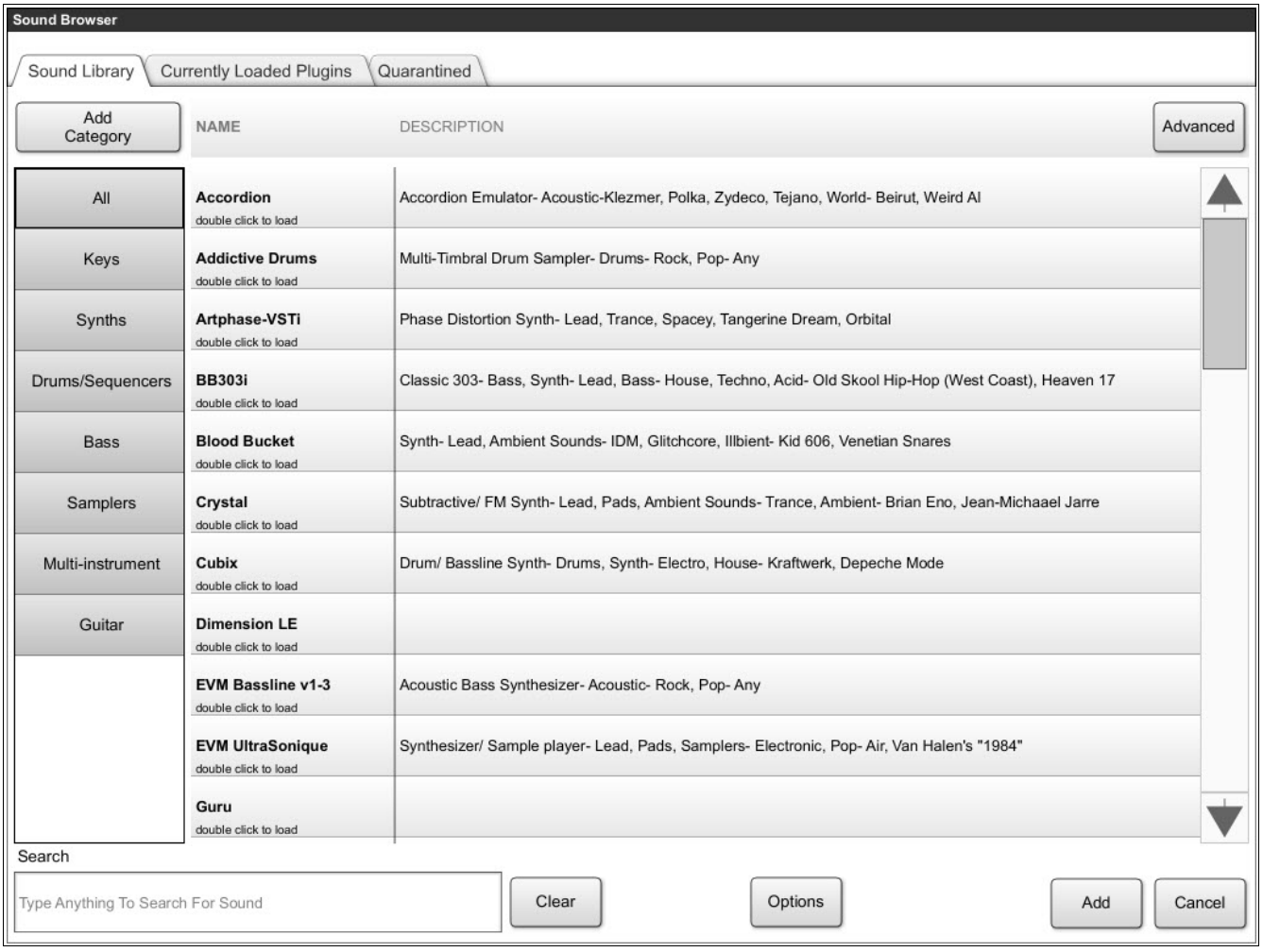
Creating a New Set and Adding an Instrument

To create a new Song; First, right-click in a grid square and select "Add".



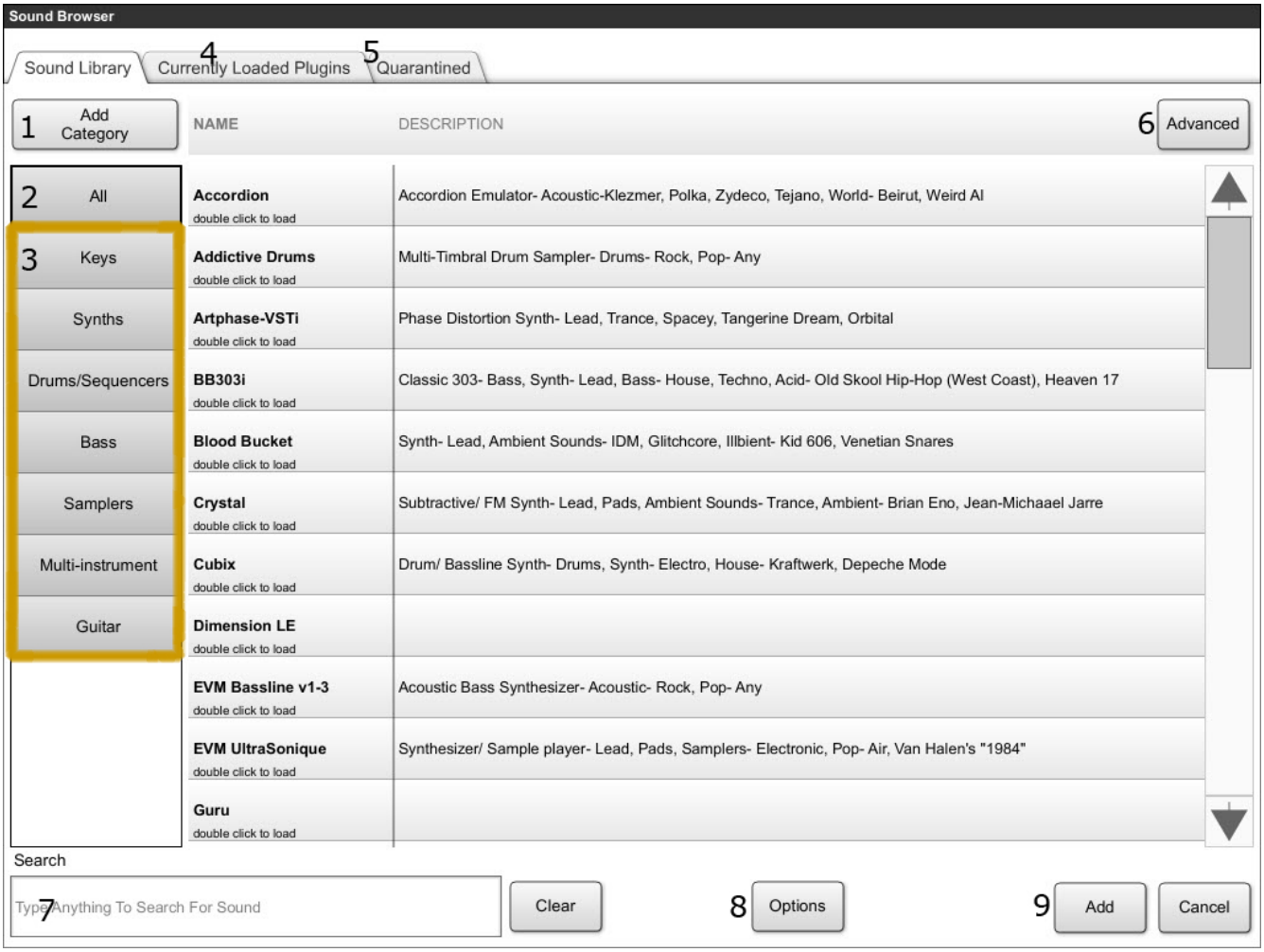
After right-clicking, you can choose from "Add...", or you can choose from an instrument category. The instrument categories are: KEYS, SYNTHS, DRUMS&SEQUENCERS, BASS, SAMPLERS, MULTI-INSTRUMENT, and GUITAR. *Refer to Appendix B for a list of instruments.*

If you click “Add” you will see the Sound Browser. Pick an instrument from the list and press the [Add] button. This will insert this instrument into the Song grid for you to play.

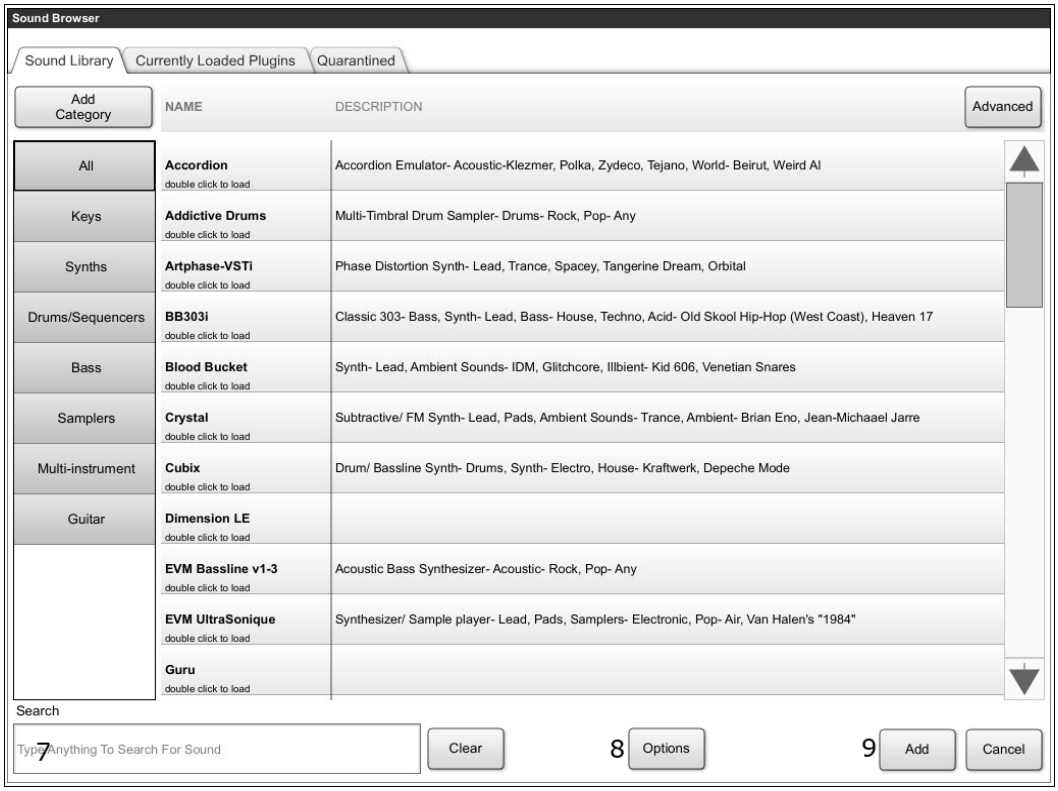


About the Sound Browser

The following will give you a run down of the Sound Browser.



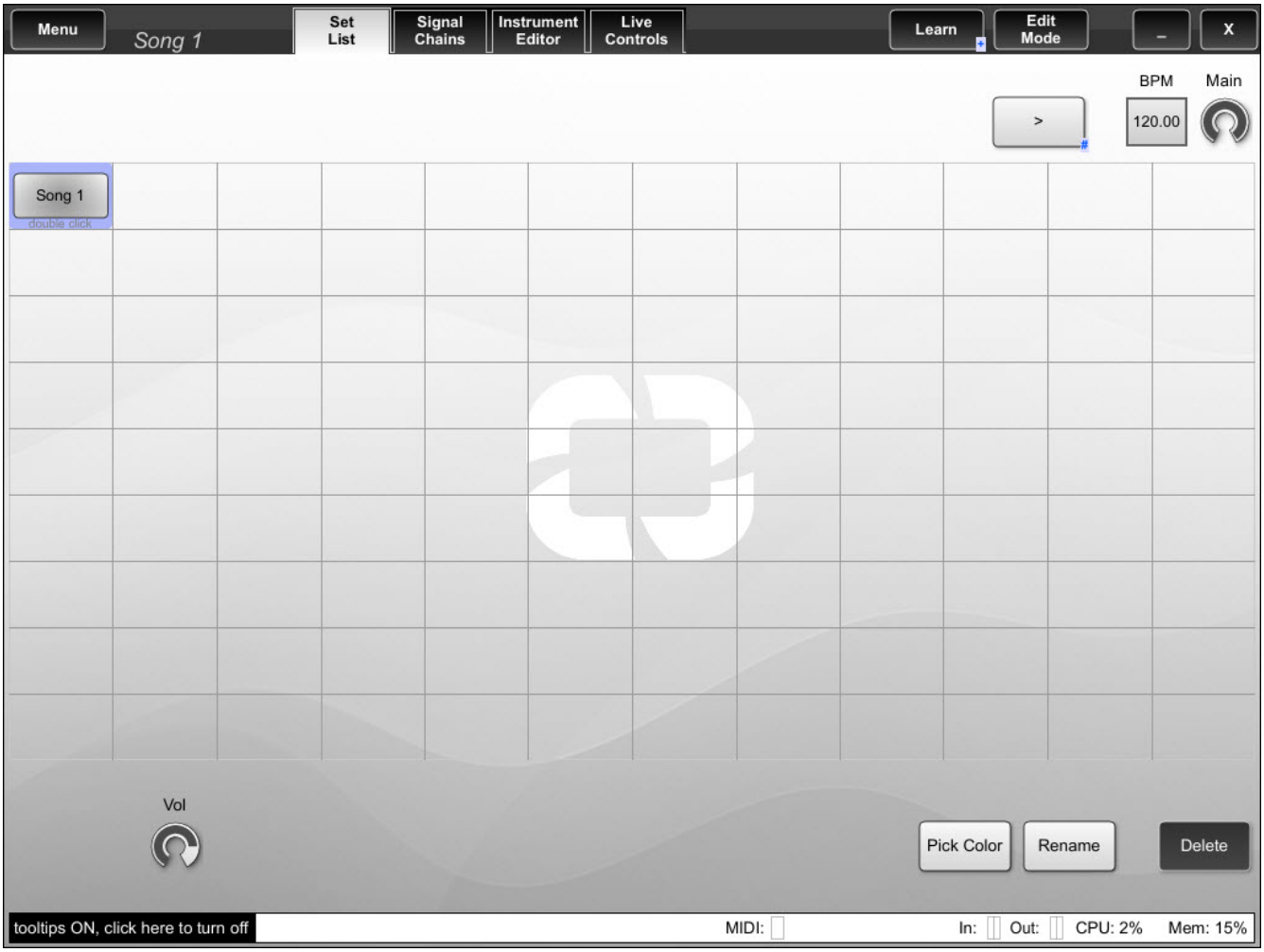
1. *Add Category* – Adds a new custom category to the category column. Instruments can be drag -n-dropped into a category. A Category can also be renamed to describe the type of instruments it contains.
2. *All* – This list contains all the instruments profiled by your assigned plug-ins folder.
3. *Categories* – Instruments are arranged by their category. You can also create categories. Right-click and select "Add". Then drag a plug-in to this new category.
4. *Currently Loaded Plugins* – Use this to load a sound that is already loaded in another Song. This is how you can "share" instruments between songs.
5. *Quarantined* – If an instrument does not work properly with Riff, you can right-click it and have it sent to the quarantine list.
6. *Advanced* – Switches the sound browser over to the advanced view. Selecting the advanced view will become the default Sound Browser view until you press it again. *Refer to the image on the next page.*



The advanced window shows you the type of instrument, manufacturer, format (VST/dx), in/out, and file path.

7. *Search* – Type in the name of an instrument then hit "Enter" on the keyboard to locate it. Use the [Clear] button
8. *Options* – This launches Riff's options page as detailed in Chapter 2 "Plug-in Options".
9. *Add/Cancel* – When you select an instrument in the list, press the [Add] button to add it to the song.

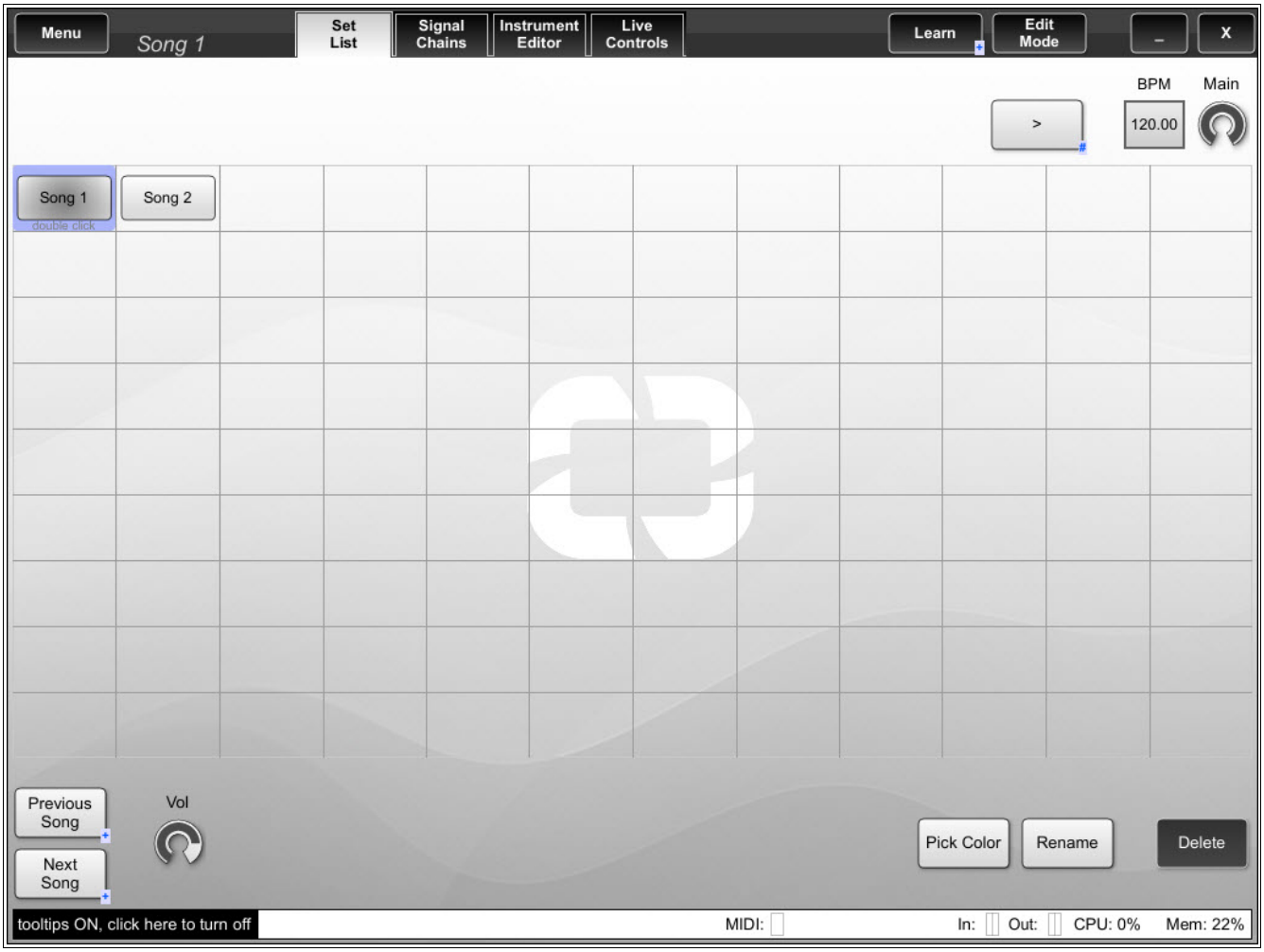
Once an instrument is added to the Setlist, this is what you will see. Please refer to Chapter 3 for an explanation of this screen.



You can now play this sound with the ivory keys.

If you want to adjust the settings of the instrument in the first song, click the [Instrument Editor] tab, which is located on the Title Bar.

If you add another Song to the Set List, the [Previous Song] and [Next Song] buttons appear. These two buttons will be in the lower left corner of the screen. And, will allow you to move to the next song in the Set List.



Saving a Set

To save the current Set List, go to Menu>File>Save Set As....
When the window pops up, type in a name and hit [OK].

Rename a Song

Right-click a Song, then choose "Rename" and finally type in a name.

Importing Racks, Signal Chains, Songs, Inputs

Go to Menu>Import> here you will see the various import options.

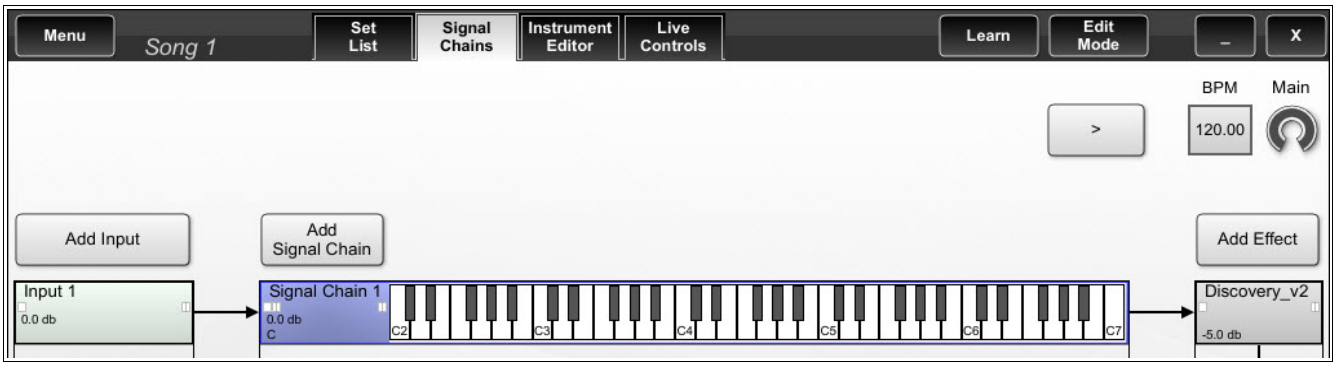
Exporting Racks, Signal Chains, Songs, Inputs

Go to Menu>Export> here you will see the various export options. Make sure to have the item you want to export selected.

Using the Signal Chain

Adding an Additional Instrument to a Song

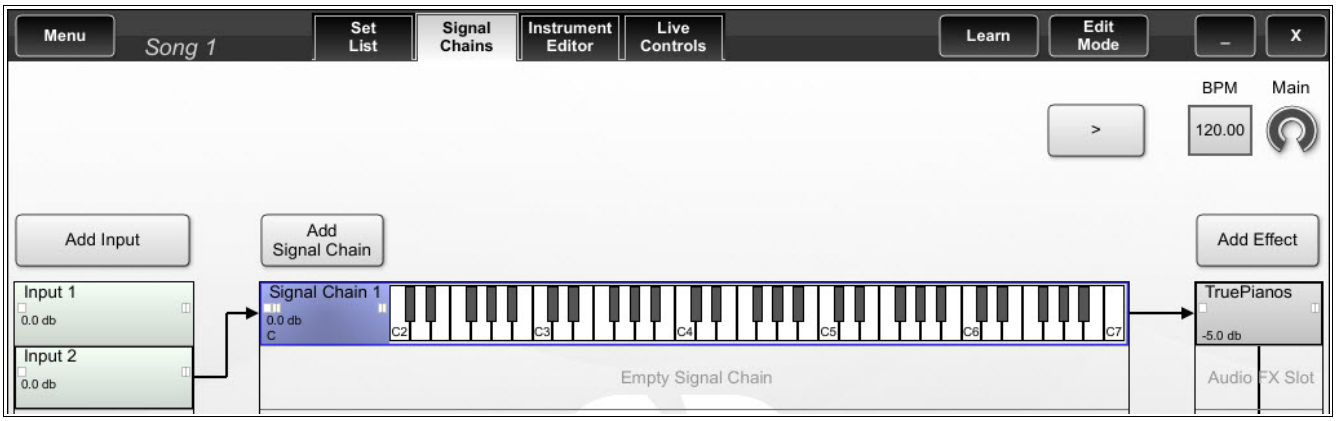
As stated in Chapter 3, a Song can contain multiple instruments in one song square. To add multiple instruments to one Song, select the Signal Chain Tab at the top of the screen.



[Add Input] - This allows for an Input to be created with a signal chain containing a VSTi, or an empty signal chain with no VST. In order to use the VSTi's and play them, an Input must be selected with the desired plug-in.

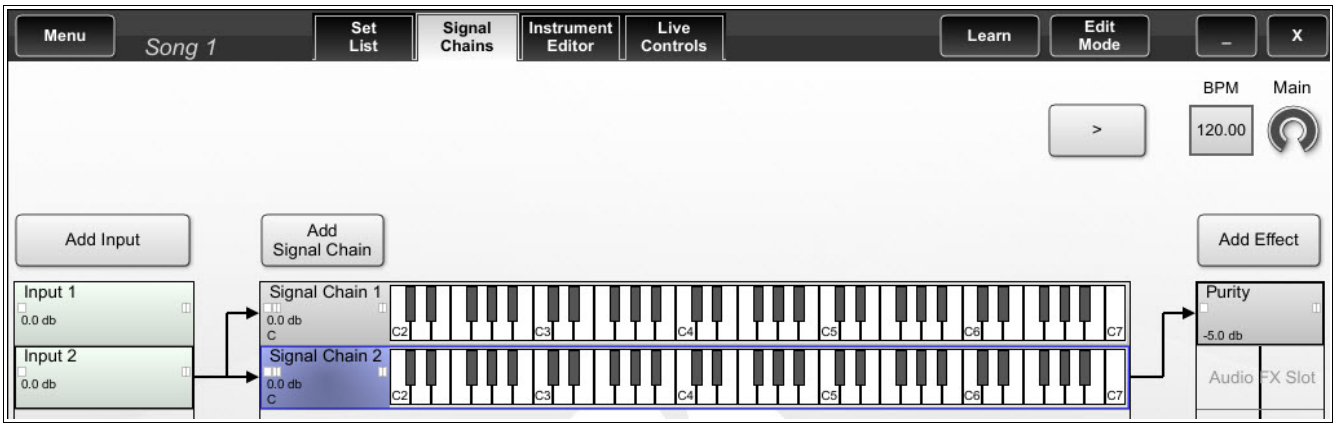
[Add Signal Chain] – Use this button to create a new signal chain with a VSTi, or create an empty signal chain for unique key splits. Touching the screen on a blank signal chain will give you the same add option.

To add that additional sound to this song go ahead and press the [Add Input] button. Again, you can decide to pick a sound by the category, or by using the Sound Browser.
The next image shows you that there are now two inputs in this song. Clicking on each input will play (solo) that sound.



Creating Keyboard Splits in a Song (Signal Chain)

Creating keyboard splits are now easier than ever! Select the input you want to create a split on. Now click the [Add Signal Chain] button. Select a new instrument. For this tutorial, True Piano is in the first signal chain, and Purity is in the second.



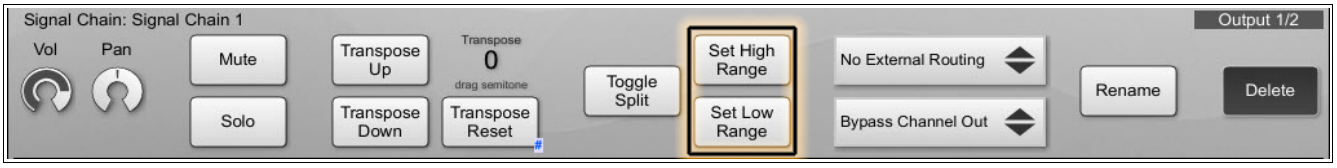
The above image shows that the second input now has two items in the Signal Chain. To adjust the settings of a Signal chain instrument, select it in the signal chain then either select the [Instrument Editor] tab, or double left-click the instrument to the right in the "Stream Processor" section. *Refer to Chapter 3.* Pick a sound for each Signal Chain instrument.

There are a couple ways to create splits. You can use the mouse and arrow pointer to create the split. Or you can use the touch screen. Select the signal chain instrument that you want to split and either touch screen/left-click and drag from the right or left of the keyboard. While you are dragging, the ranges will split. The other way is to use the "Set Range" buttons.

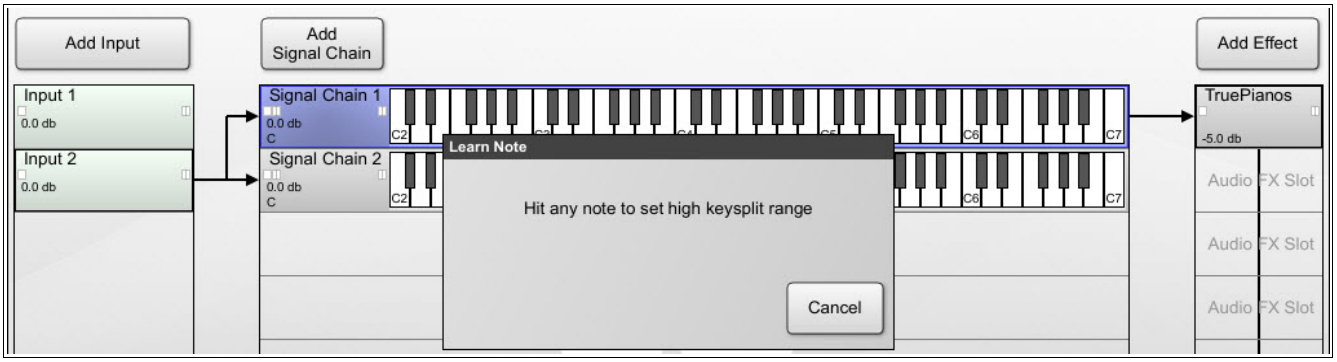
If you are not satisfied with a split and want to revert, select the Signal Chain instrument and press the [Toggle Split] button. This will spread the keyboard back to full range with no split.

Now let's create that split using the "Set Range" buttons:

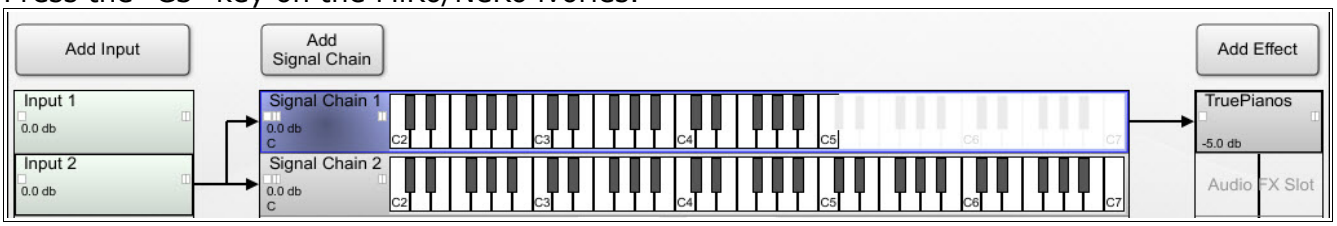
Select the first signal chain. Press the [Set High Range] or [Low Range] buttons. These are located at the bottom of the screen.



Pressing the [High Range] button brings up the following dialogue window.

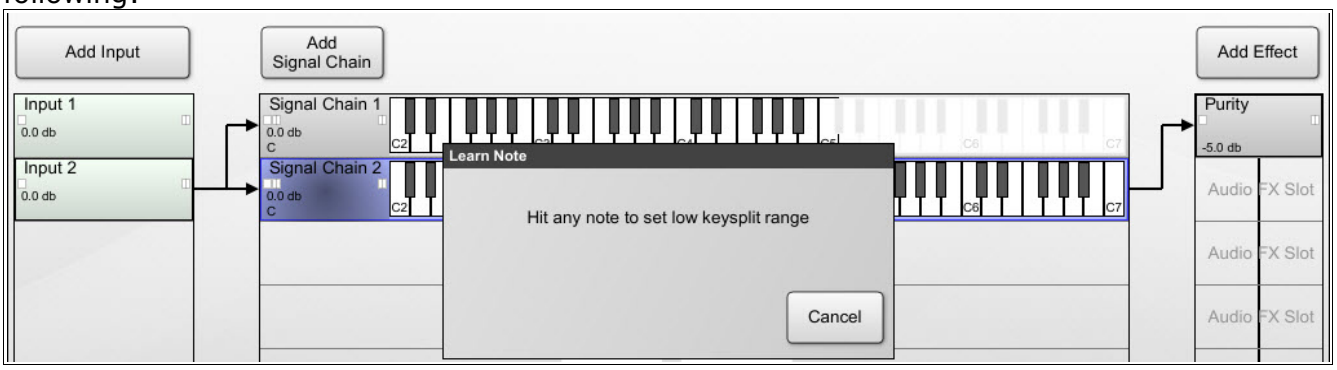


Press the "C3" key on the MiKo/NeKo ivories.

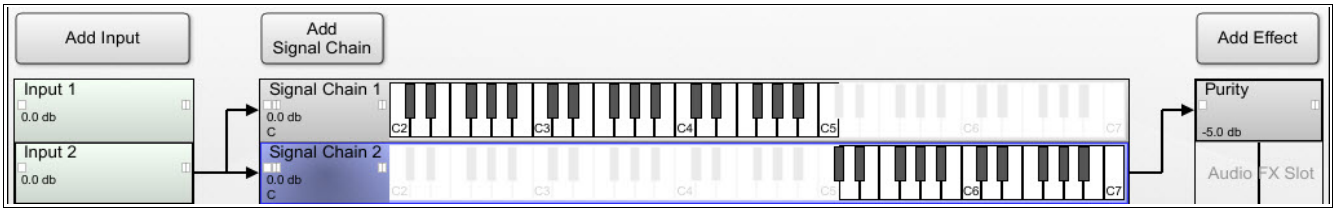


All notes above "C3" are now split off.

Now, select the second Signal Chain. And press the [Set Low Range] button. You will see the following:



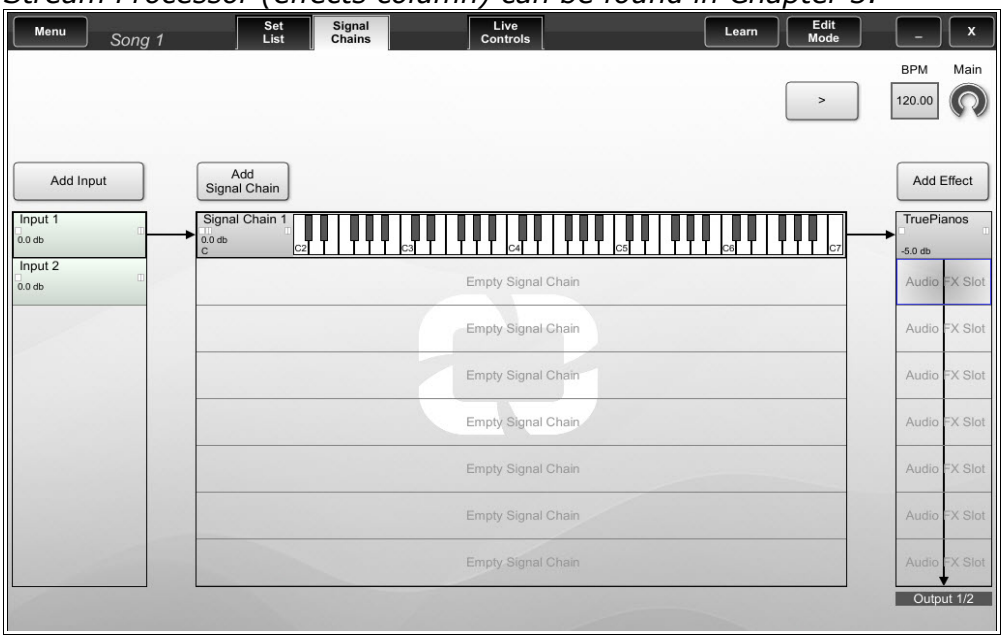
Press the "C#3" key on the MiKo/NeKo ivories.



As you can see you now have the lower section of True Pianos split from C3 down, and Purity split from "C#3" up.

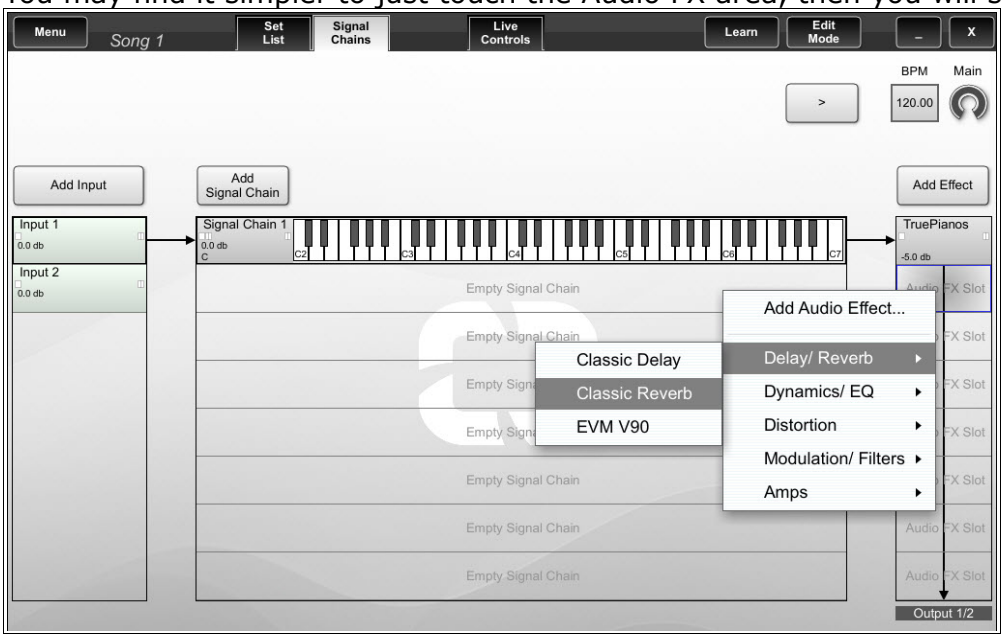
Adding Effects to an Input or Signal Chain

You can add a VST effect or MIDI effect to the desired signal chain. A maximum of seven audios, or seven MIDI effects can be chosen per signal chain. *More information regarding the Stream Processor (effects column) can be found in Chapter 3.*



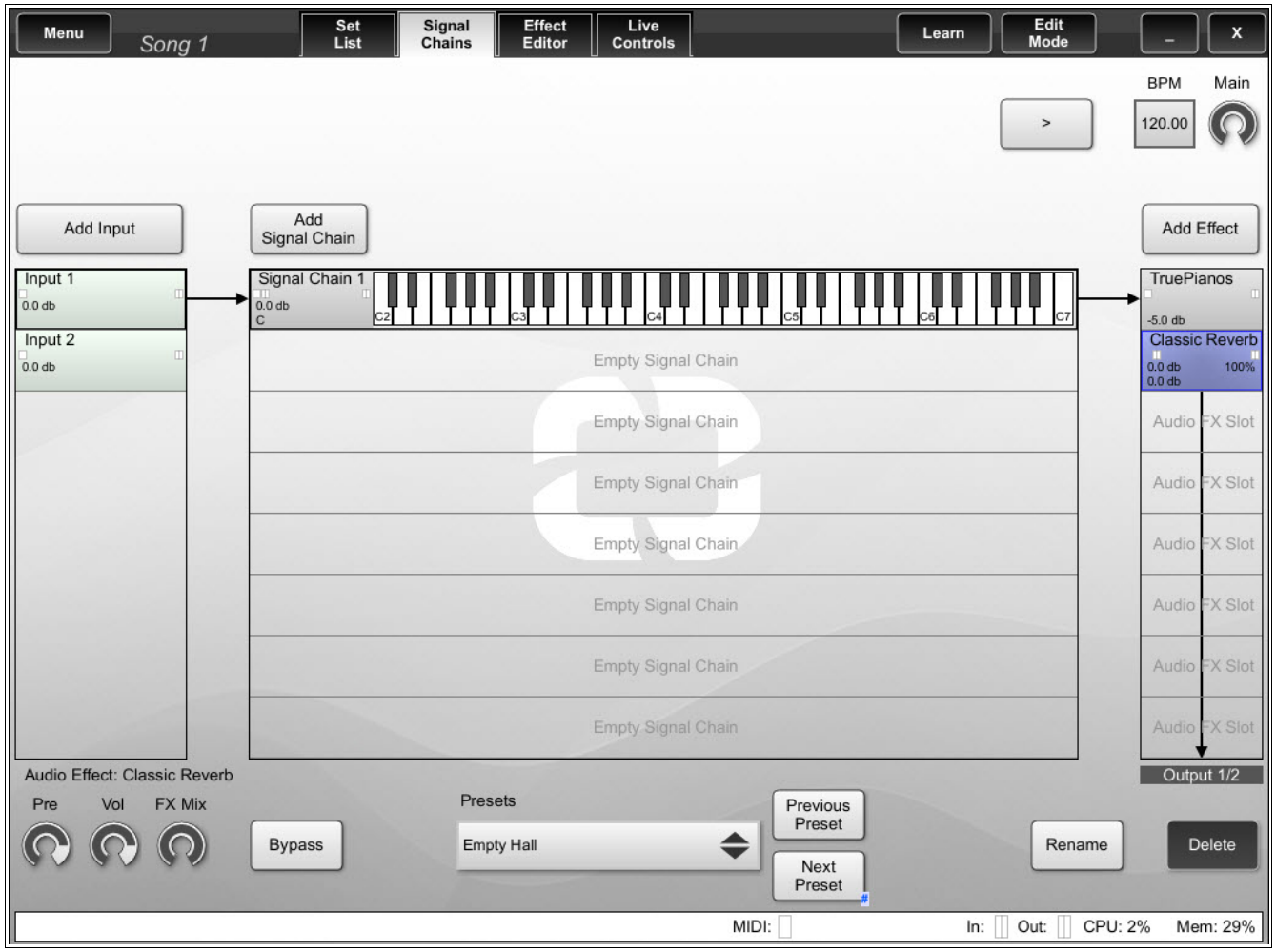
Audio FX Slot: This is where all the audio effects are stored for the chosen signal chain. To add an effect, use the [Add Effect] button located above or simply touch the screen on a blank slot under. Pressing [Add Effect] will bring up an effects browser very similar in workings as the Sound Browser.

You may find it simpler to just touch the Audio FX area, then you will see the following:



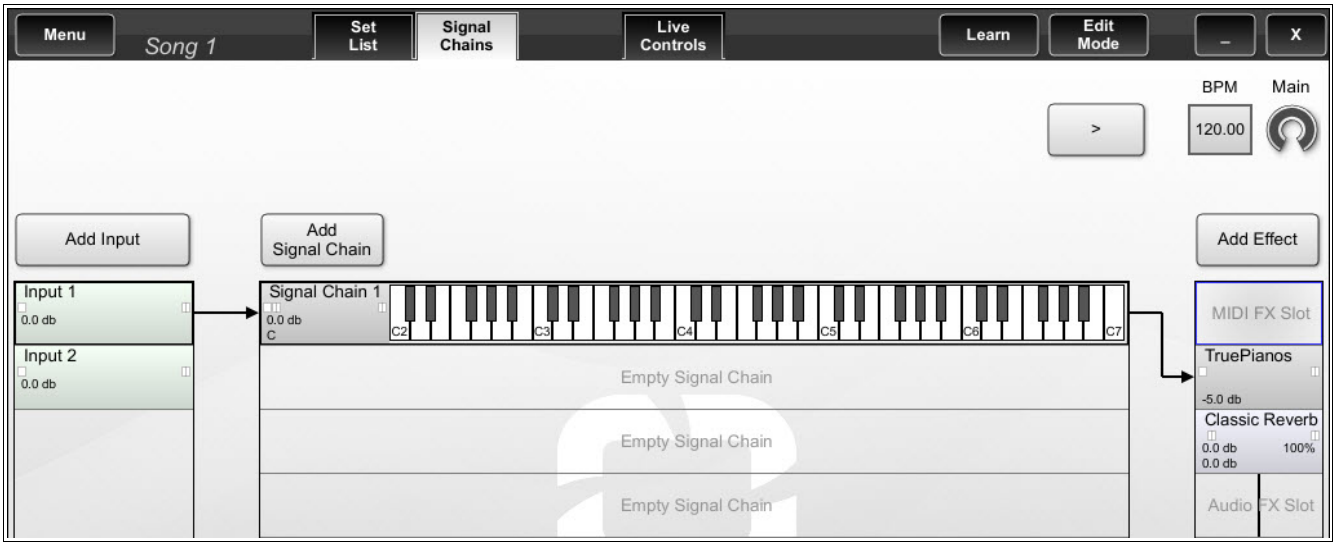
You can choose an effect by the category.

The next screen shot shows that there is an effect (in the Stream Processor) under True Pianos. When the effect is selected the “Effect Editor” will be present in the title bar.

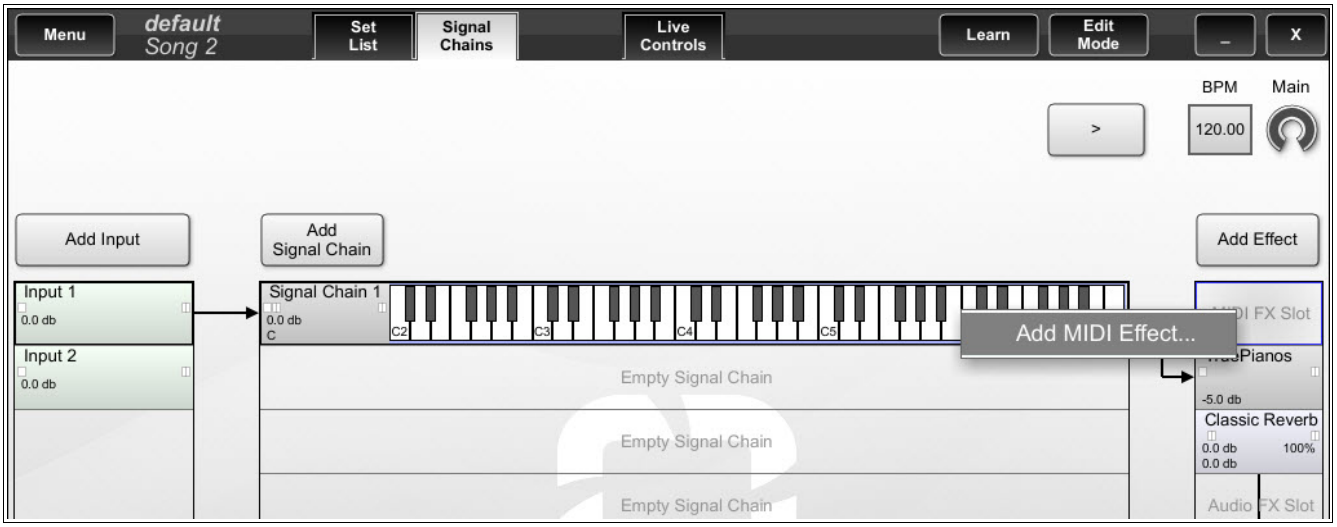


Adding MIDI FX

To add a MIDI FX, left-click and drag the VSTi down by one slot, and this will open up the MIDI FX slot. If there is already an instrument and an audio effect already present, you will have to move each effect down one slot to open up the MIDI FX slot.

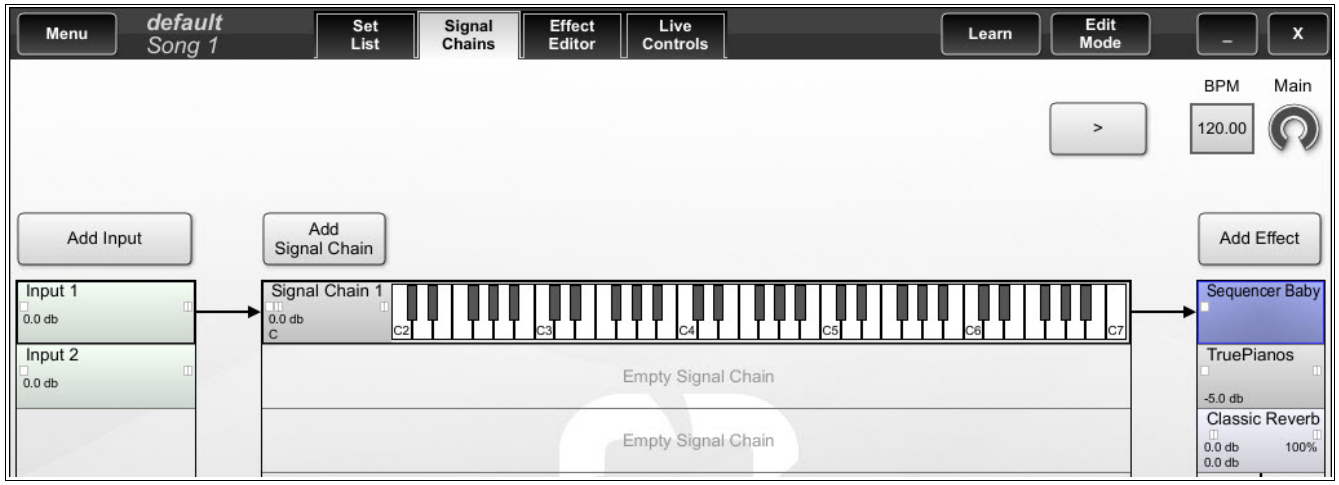


Right-click the "MIDI FX Slot" and select [Add MIDI Effect..].

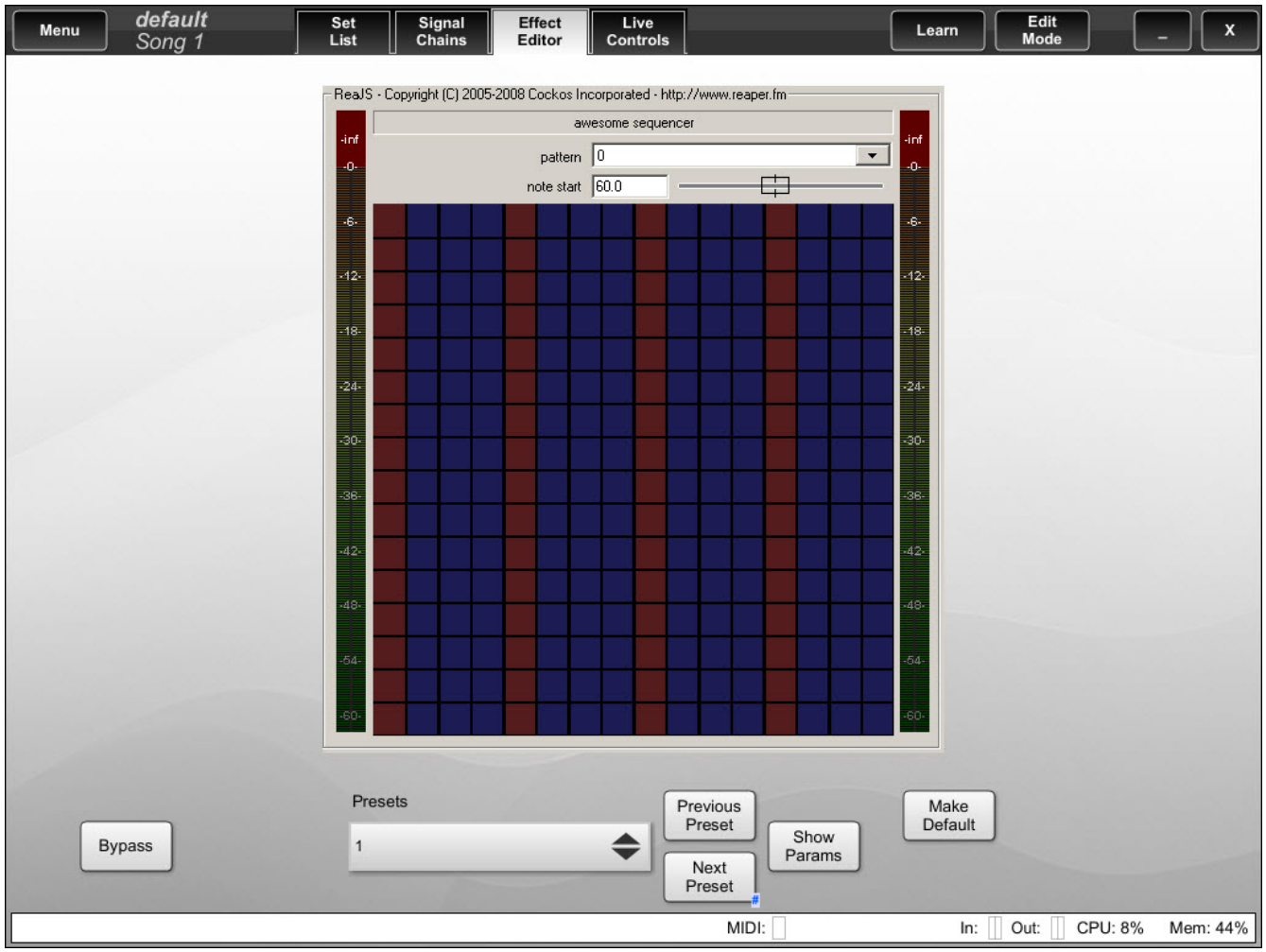


A screen similar to the sound browser will appear, here you choose the MIDI effect. The type of MIDI effects you can expect to find here in Riff are arpeggiators, MIDI note repeaters, basic MIDI step sequencers, humanizers, etc.

The next screen shot shows the MIDI effect "Sequencer Baby" has been added to the MIDI FX slot.



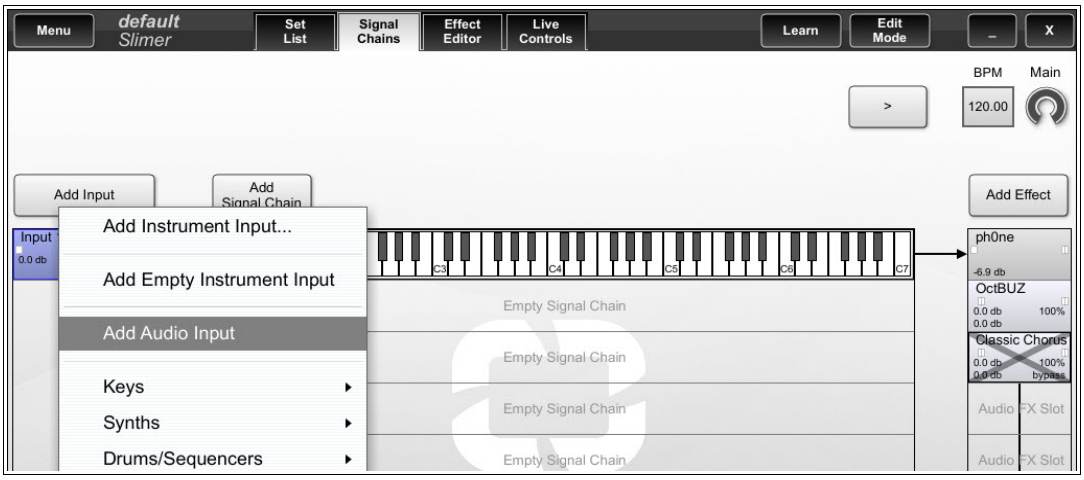
Just like regular audio effects, a MIDI effects parameters can be edited via the effect editor.



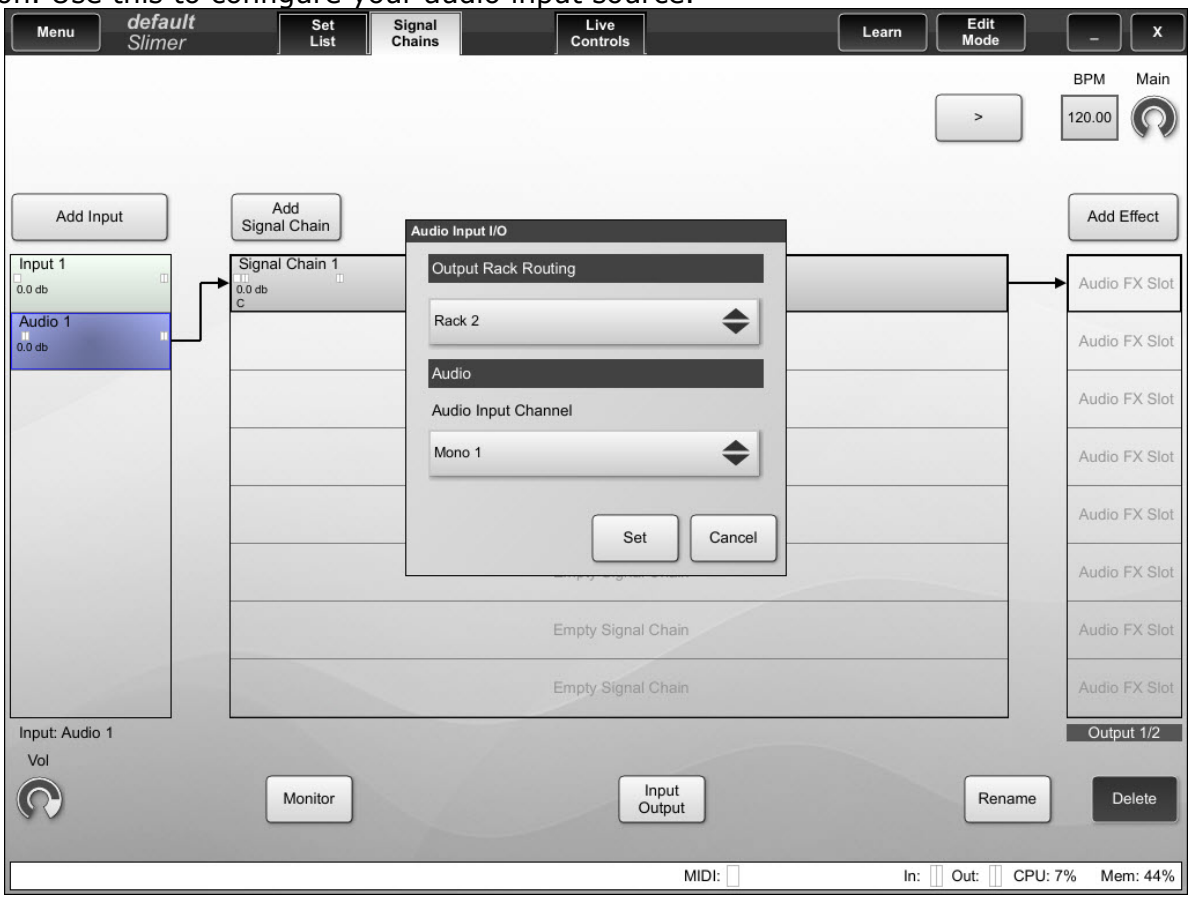
Creating and using Audio Inputs

Riff allows you to feed the signal chain a signal from a live input device, such as a guitar, bass, or microphone. *Refer to Chapter 1 for audio device setup options.*

Click on the [Add Audio Input] button to insert the audio input to the signal chain.

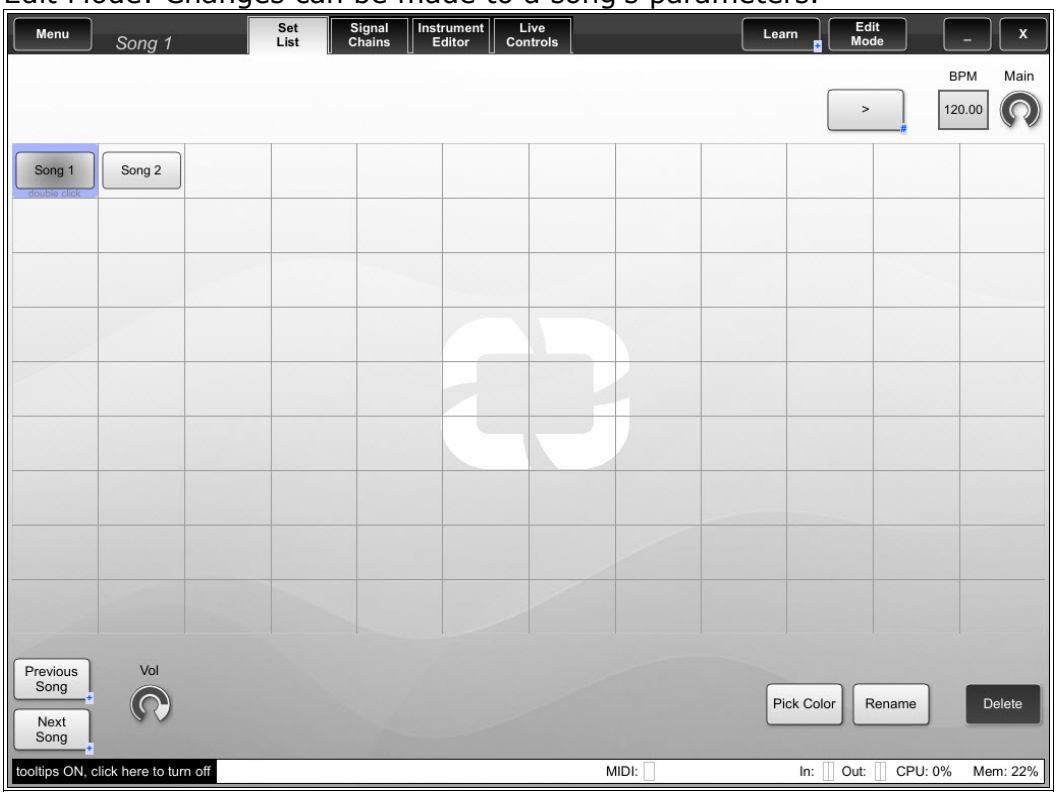


Once the input is inserted, click the [Input Output] button in the center of the lower control section. Use this to configure your audio input source.



Edit Mode vs. Live Mode

Edit Mode: Changes can be made to a song's parameters.



Live Mode: Locks down many of the parameters associated with songs.



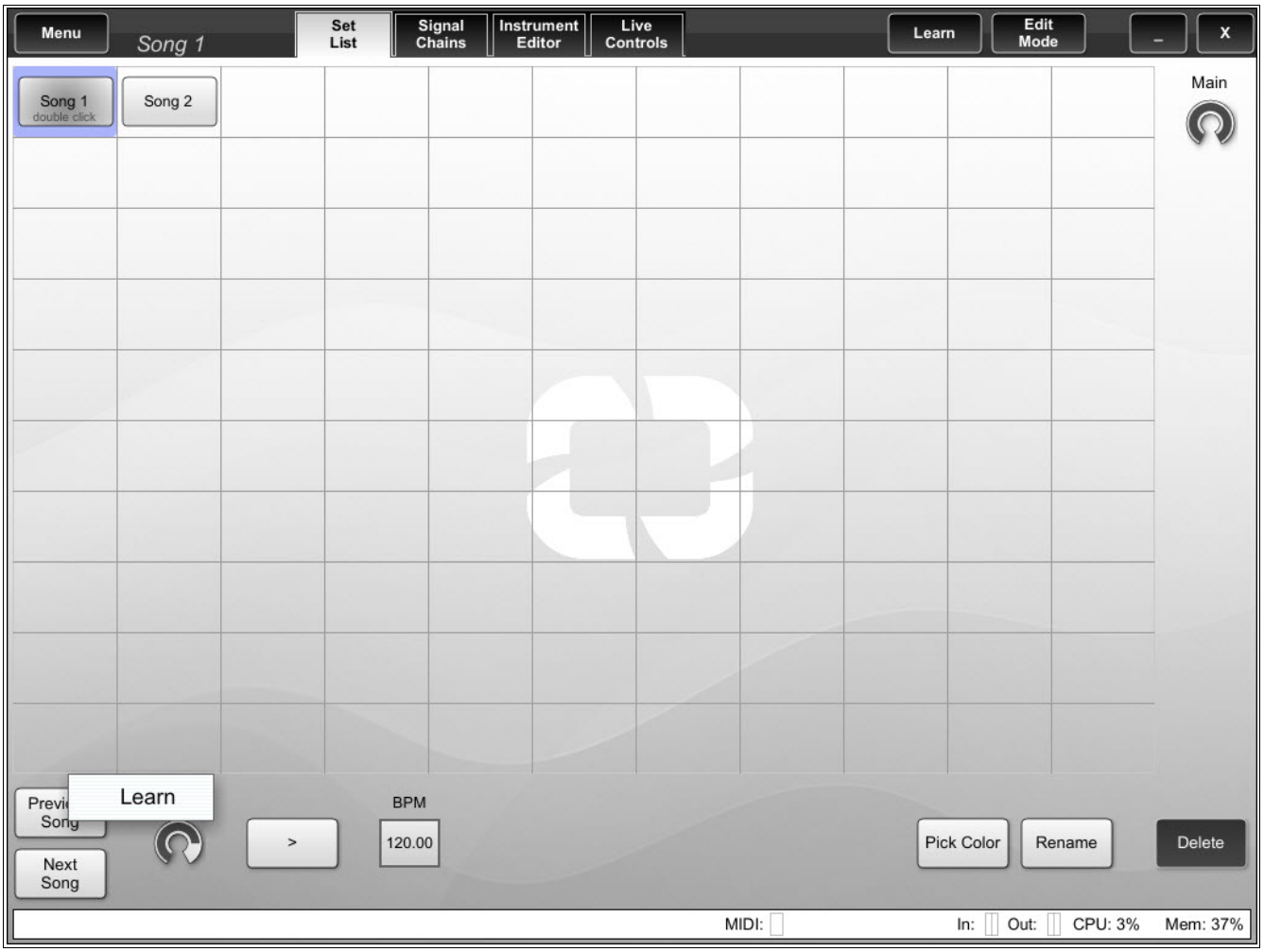
MIDI Learning Hardware Controllers

Most parameters in Riff can be MIDI "Learned".

The first tutorial will show you how to MIDI learn an Riff button to a hardware button on the MiKo/NeKo.

First off, return to the Set List and add a couple of Songs. This will show you how to MIDI learn hardware buttons to control the Previous and Next Song command.

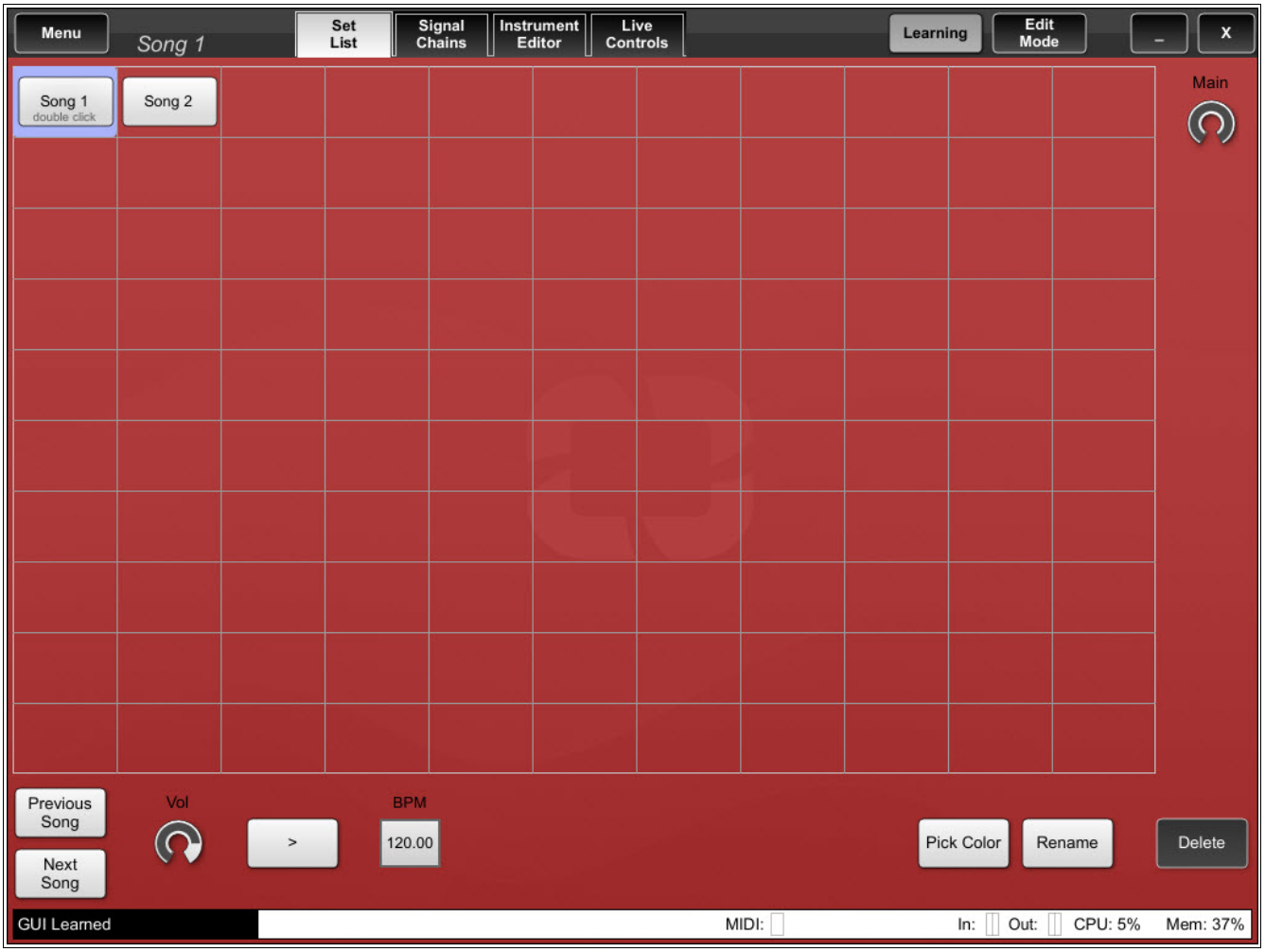
Right-click on the [Previous Song] button.



These are the items you can see in this window.

1. *Learn* – MIDI learn maps host buttons to MIDI controllers, virtual live controls to VST's, and virtual live controls to MIDI controllers.

Once you select “Learn” the screen will turn red which means Riff is waiting for you to press a button on the MiKo/NeKo. If you look at the Title Bar you will see the [Learn] button now says “Learning”. To cancel learning, press the "Learning" button.

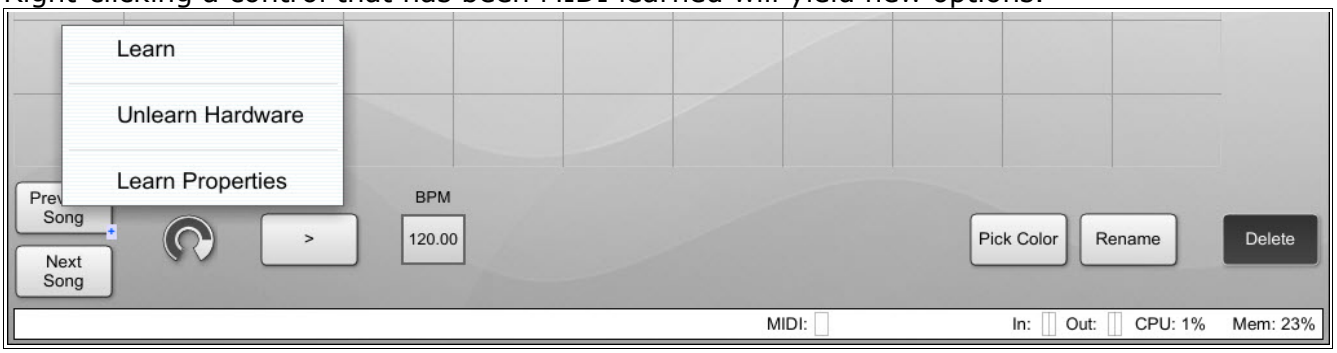


Select a button on the MiKo/Neko, once you do this the control will be latched. The following picture shows a small icon in the lower right corner of the [Previous Song] button. This represents that this control has been latched to a controller.

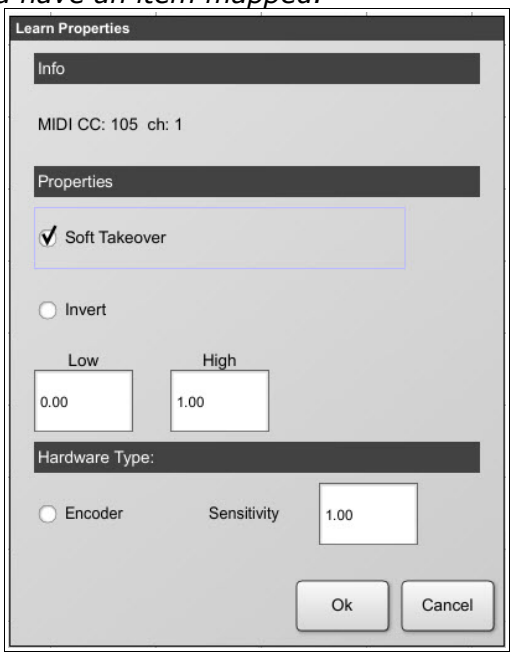


The [+] sign is for a control that has been learned, the [#] sign represents that a control has been learned relative.

Right-clicking a control that has been MIDI learned will yield new options.



1. *Learn* – MIDI learn maps host buttons to MIDI controllers, virtual live controls to VST's*,* and virtual live controls to MIDI controllers*.*
2. *Unlearn Hardware* – Use this to release a mapped item from it's MIDI controller. *This option is only available when you have an item mapped.*
3. *Learn Properties* – The following image shows the options in learn properties. *This option is only available when you have an item mapped.*



Info: this section will tell you the MIDI CC number, and the MIDI channel a particular control has been mapped to.
Properties:

- *Soft Takeover*: Allows the user to realign a latched hardware controller to the corresponding VST parameter smoothly.
- *Invert*: Reverses the high/low or on/off settings of a Live Control.
- *Low/High*: Refers to the minimum and maximum value of a parameter's range.

Hardware Type:

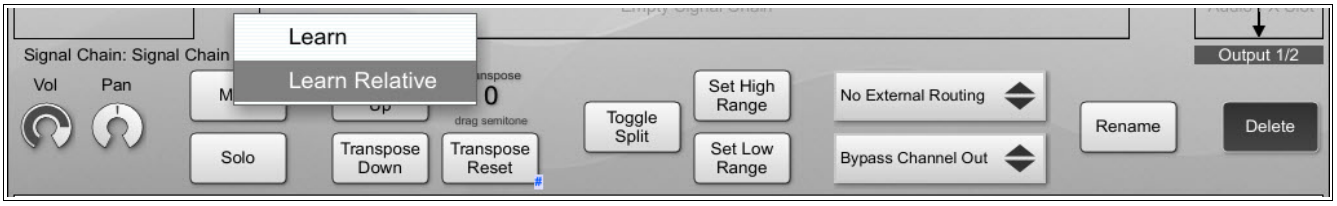
- *Encoder*: Informs Riff that an encoder hardware control is being used to perform as a regular knob. Instead of sending +/-1 it will scale from 1 to 127.
  Sensitivity: Will change the rate at which the value is increased or decreased. It's similar to the "touchy" knob in live controls.

Learn Relative

Various controls in Riff can be set to MIDI "Learn Relative".



Learning a parameter to "Learn Relative", keeps that mapping for all songs. For example, if you learn relative the signal chain mute:



It will mute the highlighted signal of any song (not just the particular one you are in). As long as you save this set, when you close Riff and reopen it, the learn realative mute will still function the same across all songs.

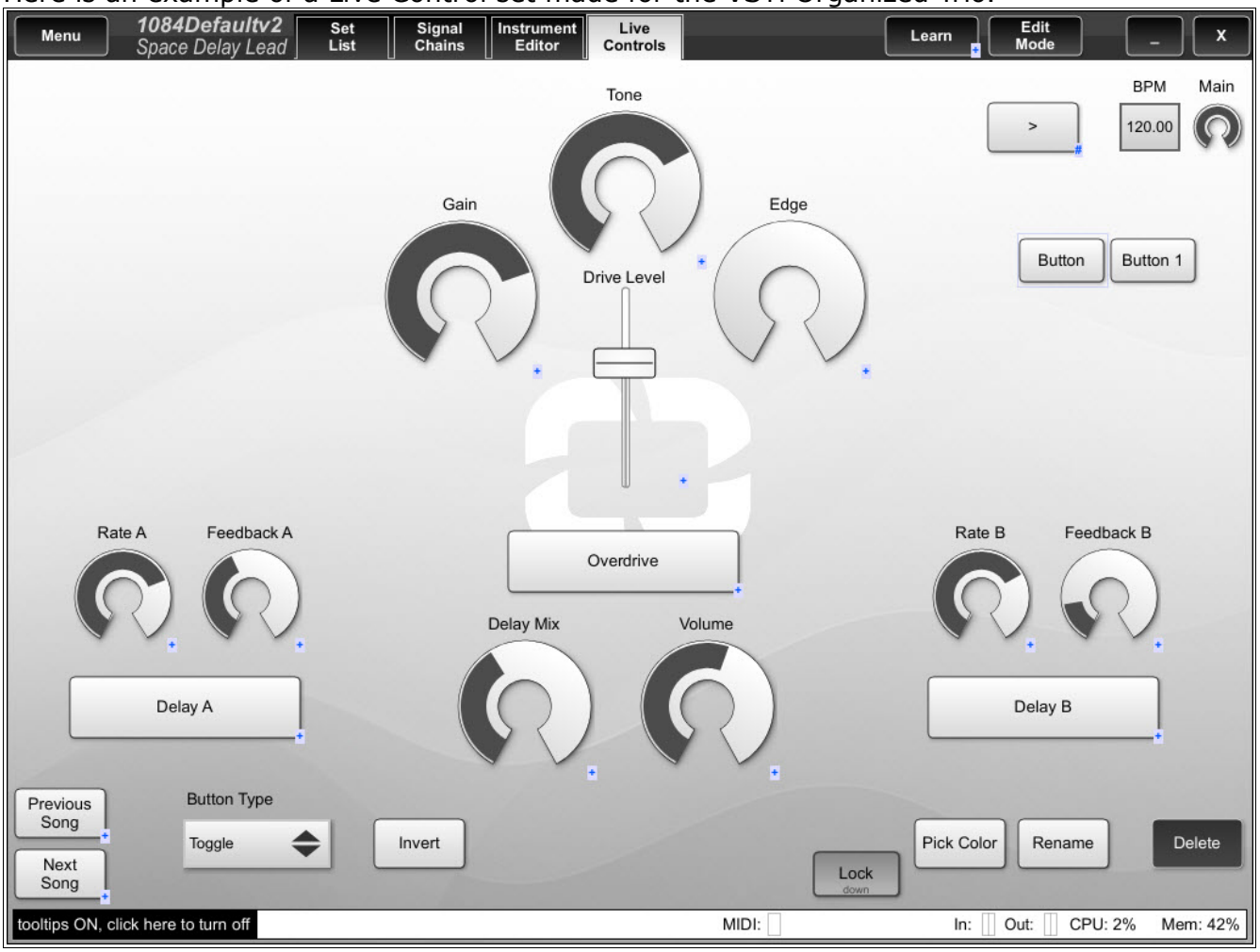
Here are some controls that can be learned relative:

- Setlist lower section Volume
- Setlist lower section play button
- Signal Chain page lower section volume
- Signal Chain page lower section Monitor button
- Signal Chain page upper control play button
- BPM Tap tempo button
- BPM +1/-1 buttons
- Signal Chain instrument lower section volume
- Signal Chain instrument lower section pan
- Signal Chain instrument lower section mute
- Signal Chain instrument lower section transpose up/down
- Signal Chain instrument lower section transpose reset
- Instrument editor lower section volume
- Instrument editor lower section transpose up/down
- Instrument editor lower section transpose reset
- Instrument editor lower section previous/next preset buttons
- Live controls lower section low/high knobs (all live controls Virtual Live Controls)
- Live controls lower section knob/horizontal properties time and offset knobs

Creating and Using Live Controls

The Live Controls are where virtual knobs, sliders, buttons and XY pads can be created, and mapped to MIDI controllers on VSTi plug-in parameters. You can also create Live Controls for VST effect plug-ins. *For more information on the types of Live Controls refer to Chapter 3.*

Here is an example of a Live Control set made for the VSTi Organized Trio.



These controls can be directly linked to the parameters of a VSTi or VST.

Hovering over a latched Live Control like the volume for instance, will allow you to see what parameter a Live Control is latched to. *Not all VST plug-ins will give such detailed information.*



Create a New Live Control

To create and use a Live Control with an instrument, try the next tutorial.

First, create a new Song. For this tutorial insert the plug-in called “MrRay22”. Click on a grid, go to the “Keys” category and select “MrRay22”.

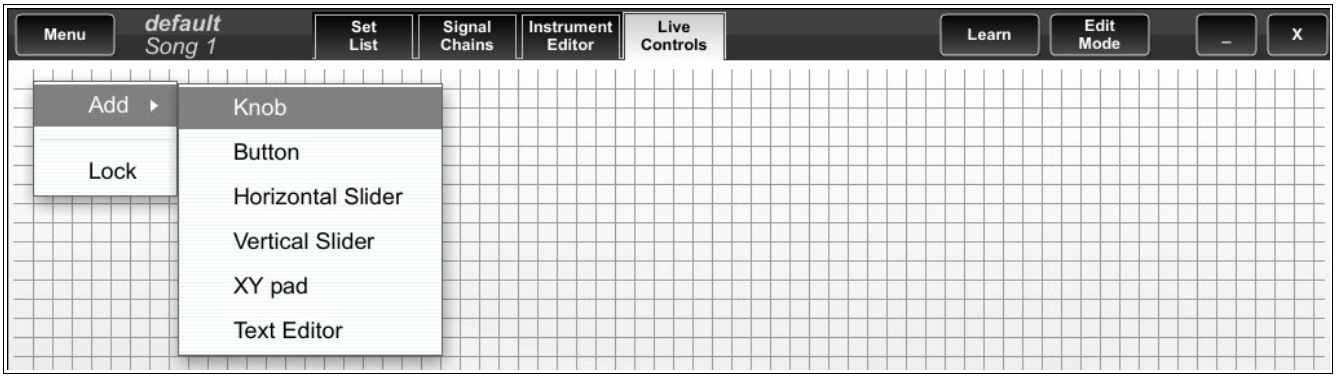
Click on the instrument editor tab to show the GUI of Mr. Ray.



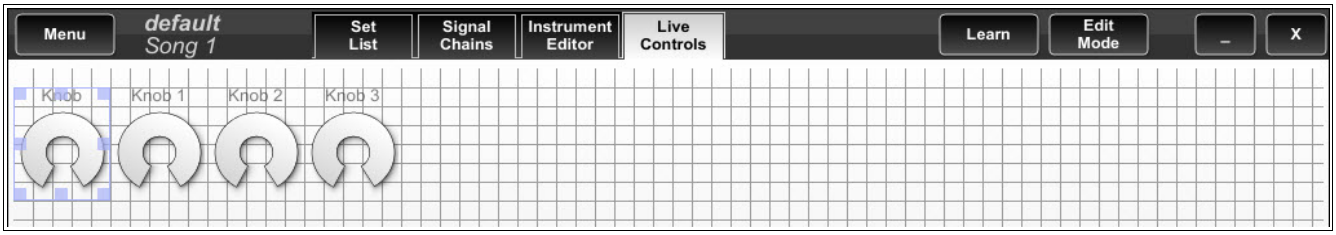
The first Live Controls will be for the “Strength”, “Stiffness”, “Rel”, and “Kbd” knobs in the Mallets section.



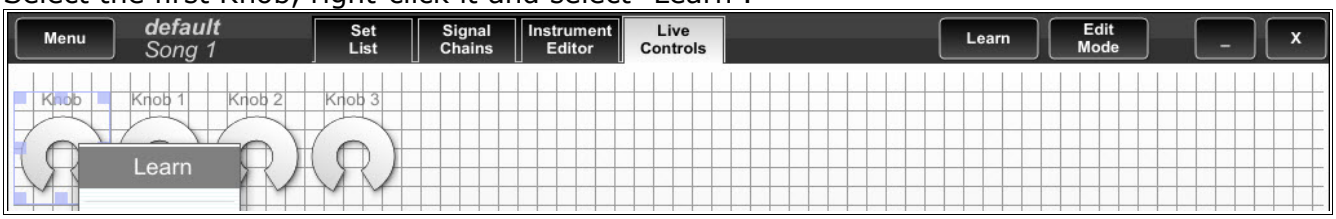
Click on the “Live Controls” tab. And add a Knob to the grid.



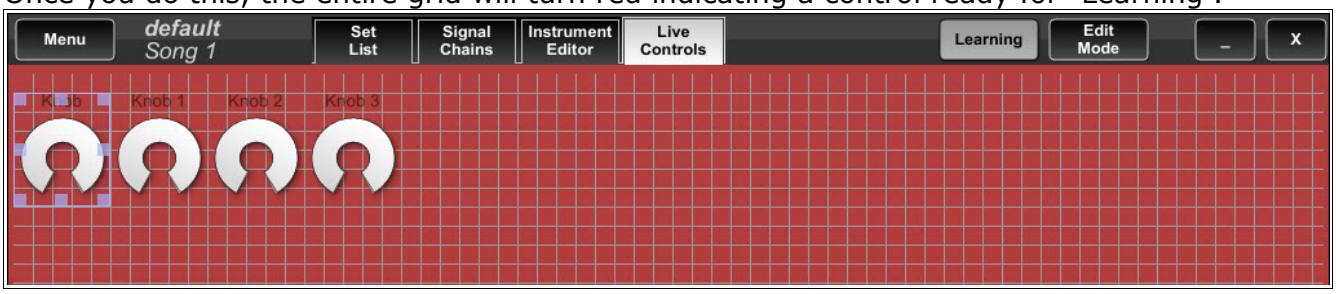
Repeat this step three more times for a total of four Knobs.



Select the first Knob, right-click it and select “Learn”.



Once you do this, the entire grid will turn red indicating a control ready for “Learning”.



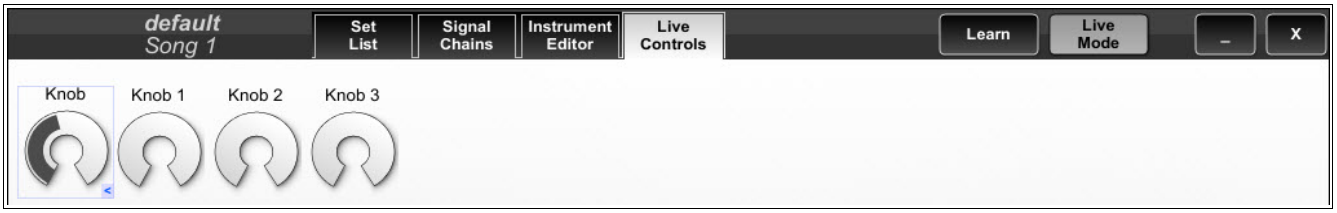
When Riff is in Learning mode, the program awaits for you to select a parameter to latch this knob to.

Click the “Instrument Editor” tab to get back to the GUI of Mr. Ray. Touch the "Strength" knob using either the touchscreen or the touchpad.



This screen will turn back to the default color and this control learned to the Live Control. Click on the “Live Controls” tab once again.

Switch Riff over to “Live” mode, play notes on your keyboard, and use the touchscreen to move the first knob.



Hovering over the first knob shows it to be mapped to Mr. Ray, Param 23 which is Mallets: Strength.



To rename or change the color of a Live Control, switch back to “Edit Mode” select the Live Control and press the [Pick Color] or [Rename] button.

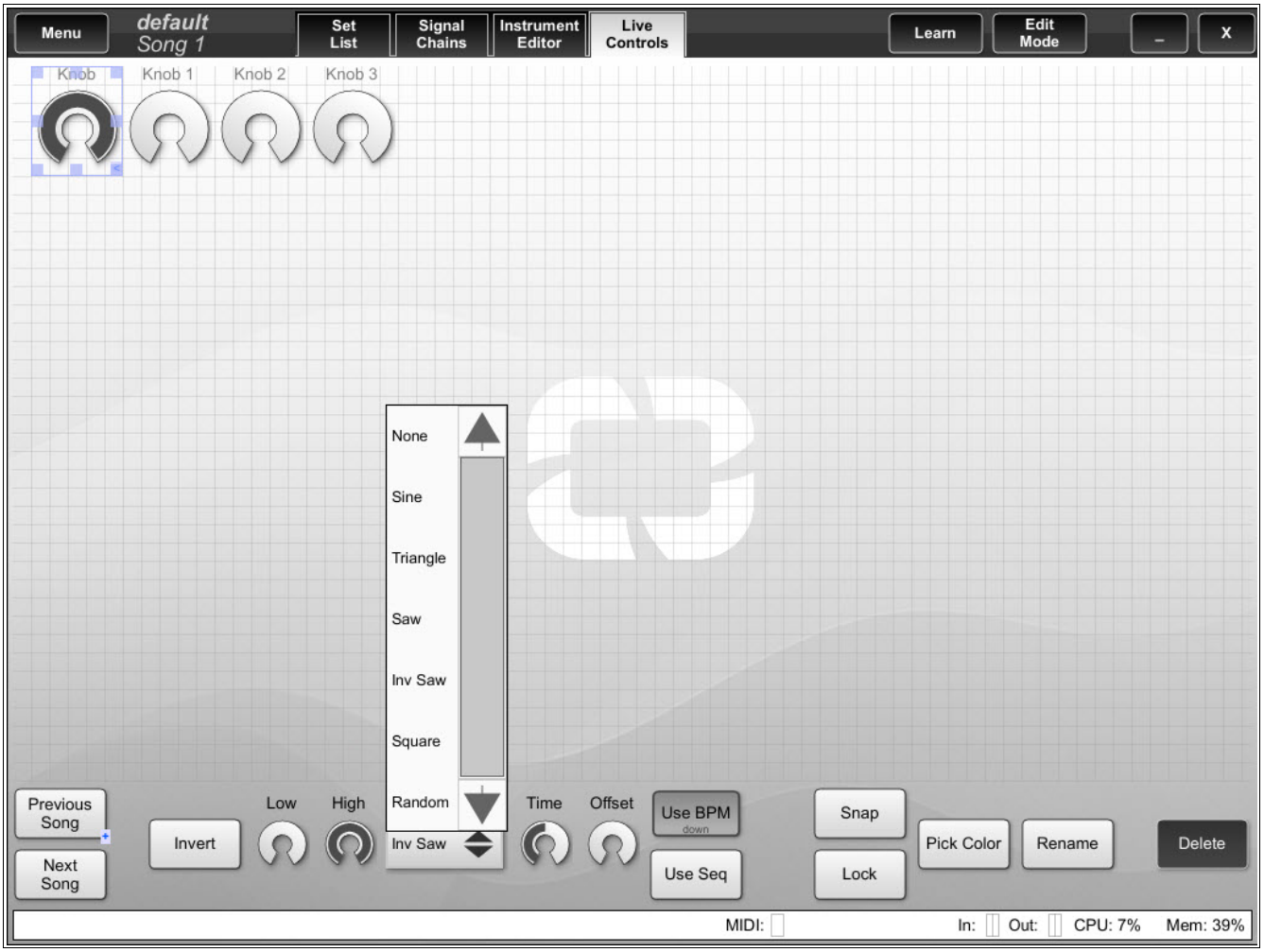
Go ahead and learn the other three knobs to the controls of the Mallets section of Mr. Ray.

Using Oscillators with Knobs/Sliders

Knobs and sliders can have an oscillator added to them. Refer to Chapter 3 for the types of oscillators used in Riff. Also, there is a definition of the term "oscillator" in Appendix A.

First off, setup a knob in your Live Controls. For this tutorial, I am going to use the same Live Controls made in the last tutorial with Mr. Ray.

Click on the knob, then select the "Oscillator Type". Pick the type of osciallater type you would like to use. Once you do this the oscillator will take control over the knob.



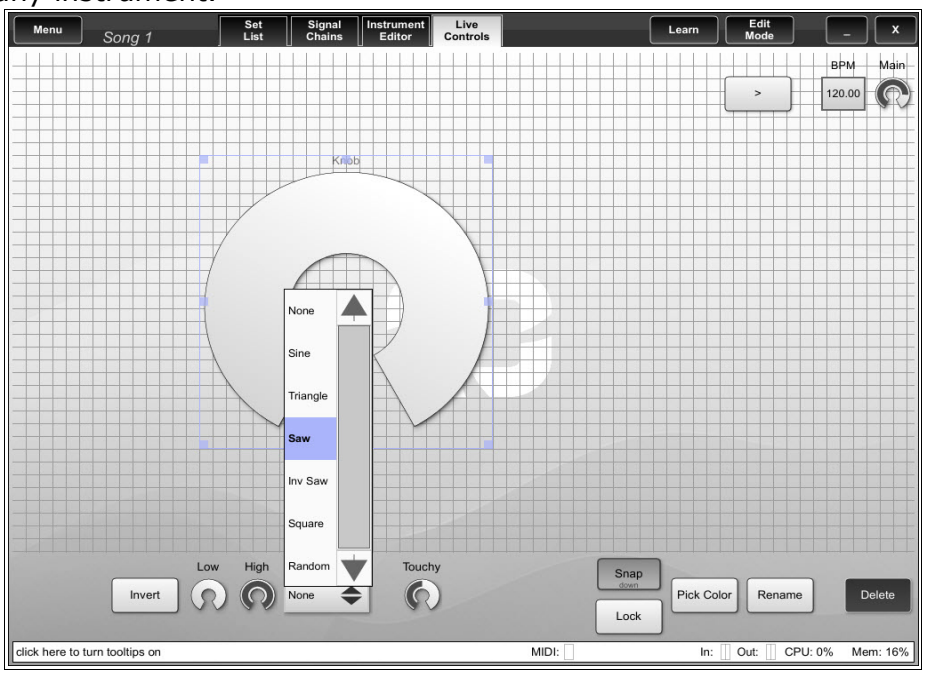
- You can sync the oscillator to the BPM of the current song by clicking on the [Use BPM] button. Also, you can sync to the sequencer hose by using the [Use Seq] button.
- You can latch the oscillators to start with the play button of the host and any other sequencer that has been synced to the host. When you hit play the oscillators start oscillating along with a sequencer (if you have put it to sync with the host). *This only applies to the selected live control.*

Mapping Live Controls to the Lower Control Section

If you have an oscillator latched to a Live Control knob, you can have that oscillator control the volume or pan control of a signal chain. The following tutorial will show you how to MIDI learn a Live Control Oscillator to the volume knob of a signal chain.

Create a new Song and add any instrument.

1. Go to the [Live Controls] tab and add a new knob. Select the new knob and add an oscillator.



2. Select the [Learn] button, then select the Knob.



3. Select the [Signal Chains] tab and select the volume knob in the Lower Controls.

Saving and Exporting Live Controls

Saving the Live Controls with the instrument will ensure that every time you open this Set this instrument will have these same live controls, and they are ready to use.

If you create a complete Live Control set for an instrument or Song, and want to save just the control array, you can Export this out of Riff for use with another song. Keep in mind, no mappings will be kept in this type of export. To export, go to Menu>File>Export>Export Live Controls, type in a name and hit [OK].

Working with Different DAWS and Sequencers

Using Multi-timbral Instruments / Sharing Instruments

This section of the tutorial will focus on using Multi-timbral instruments in Riff, but will also give you some insight on using the "Shared Instrument feature". We will you show you two ways to use a multi-timbral instrument.

A multi-timbral instrument is a VSTi that can use up to 16 MIDI channels at once. Purity is an instrument that falls into this category, and is also preinstalled on an Open Labs production station.

If you are using an Instrument like Purity, which is multi-timbral and a sample player, the benefits are crucial.

Using the "Currently Loaded Instrument" option allows you to use one instance of an instrument in multiple songs. This will save you tons of system performance and allow you to achieve far more complex instrument arrangements.

Anytime you are using big libraries it's a good idea to set an instrument to shared.

Shared instruments are not limited to an instrument having to be multi-timbral. You can set any instrument to be shared. Some normal instruments like True Pianos can be shared. True Pianos is known to use more system resources than other similar instruments. Instruments that sound better generally use more resources.

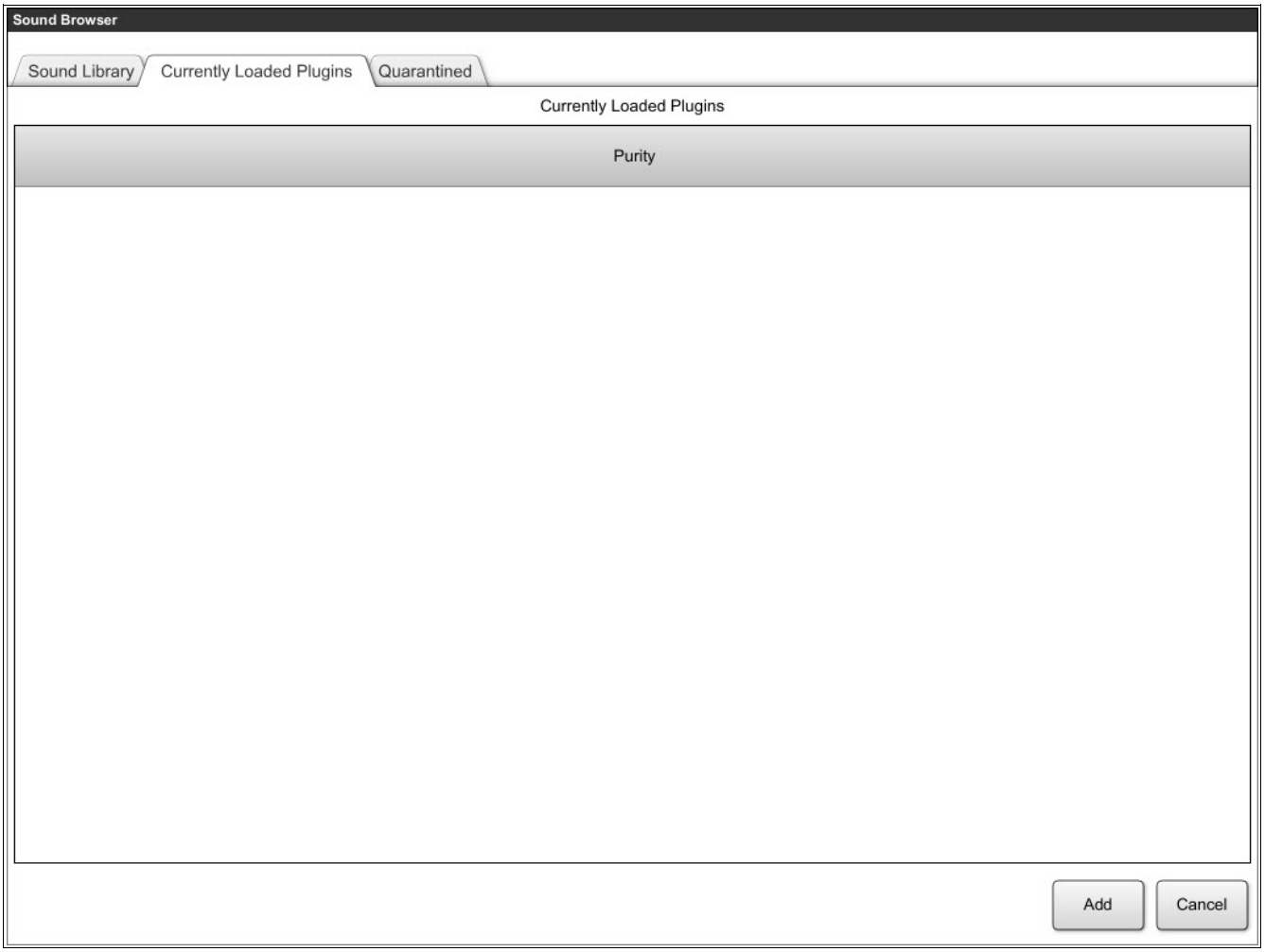
Sharing Instruments

To help save system resources, Riff has a great solution. This solution is called sharing instruments. For instance if you are planning to use the instrument "Purity" on more than one Song, normally you would have to load a new instance of Purity on each Song.

Every time you add a new instance of that instrument you use more system resources.

Riff allows you to use a "Currently Loaded Instrument" multiple times. Hence, this instrument becomes a "Shared" instrument.

To Share an instrument, first create a new Song, and add Purity to it. After doing that, go to a new grid of the Setlist, select [Add], the sound browser appears. However, this time instead of adding a new instance of Purity, select the [Currently Loaded Plugins] tab.

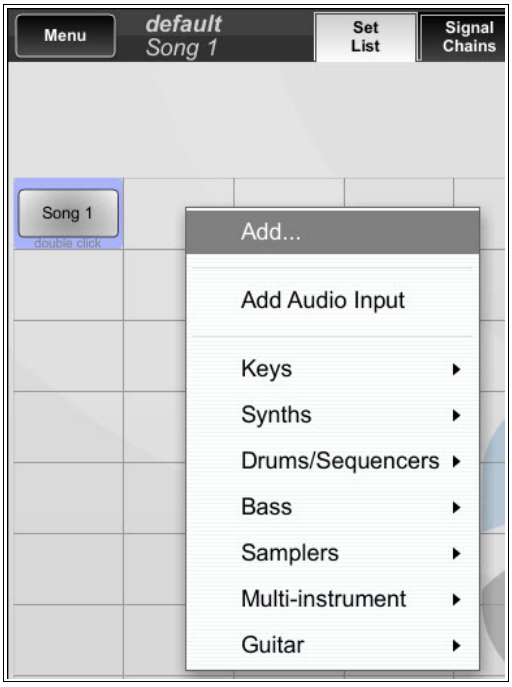


Here you will see your list of Currently Loaded Plugins. Instead of loading a new instance of an instrument, select the currently loaded instance of Purity and either press the [Add] button or double left-click the instrument. This is how you share an instrument in Riff.

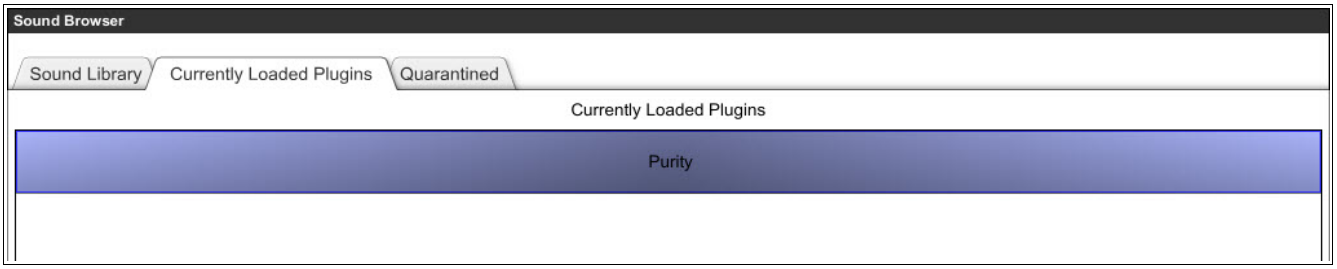
The next part tutorial will show you how to use this shared instance of Purity as a multitimbral instrument.

Song Grid and the Multi-timbral Instrument

1. Click a grid space other than the one that says "Song 1", then click on the grid to create a new Song and select [Add]. Make sure you already have one instance of Purity on the Setlist.



2. Select the [Currently Loaded Plugins] tab and add the currently loaded (shared) version of "Purity".



After [Add] has been pressed, a new Song is created with this "shared" instance of Purity as the instrument.

3. Go to the [Signal Chains] tab. Look at the Stream Processor, Purity is now yellow and the word "SHARED" is present in the tab. This confrms this instrument is indeed shared.



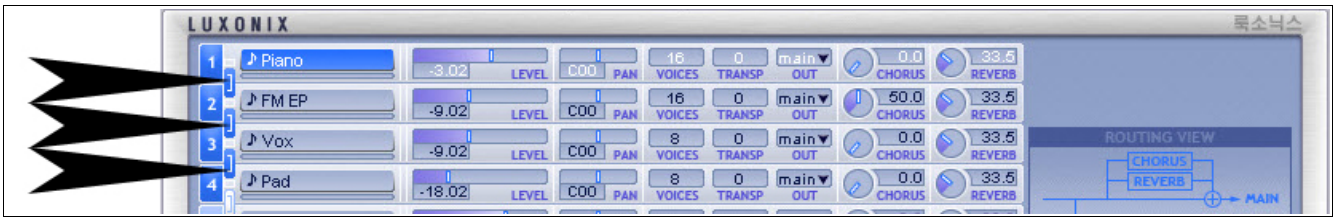
Time to set up Purity for multi-timbral use. Purity is just the example for this tutorial, however many multi-timbral instruments work similar.

The goal here is to have one instance of Purity running, utilizing its multi-timbral interface having sounds loaded on separate Songs.

For this tutorial, only four Purity MIDI channels and sounds will be used.

Go back to the Setlist page, select "Song 1" then select the [Instrument Editor] tab, click on the channel link icons in Purity. If this is not done, each pair of MIDI channels will remain linked together.

Before the links are unchecked

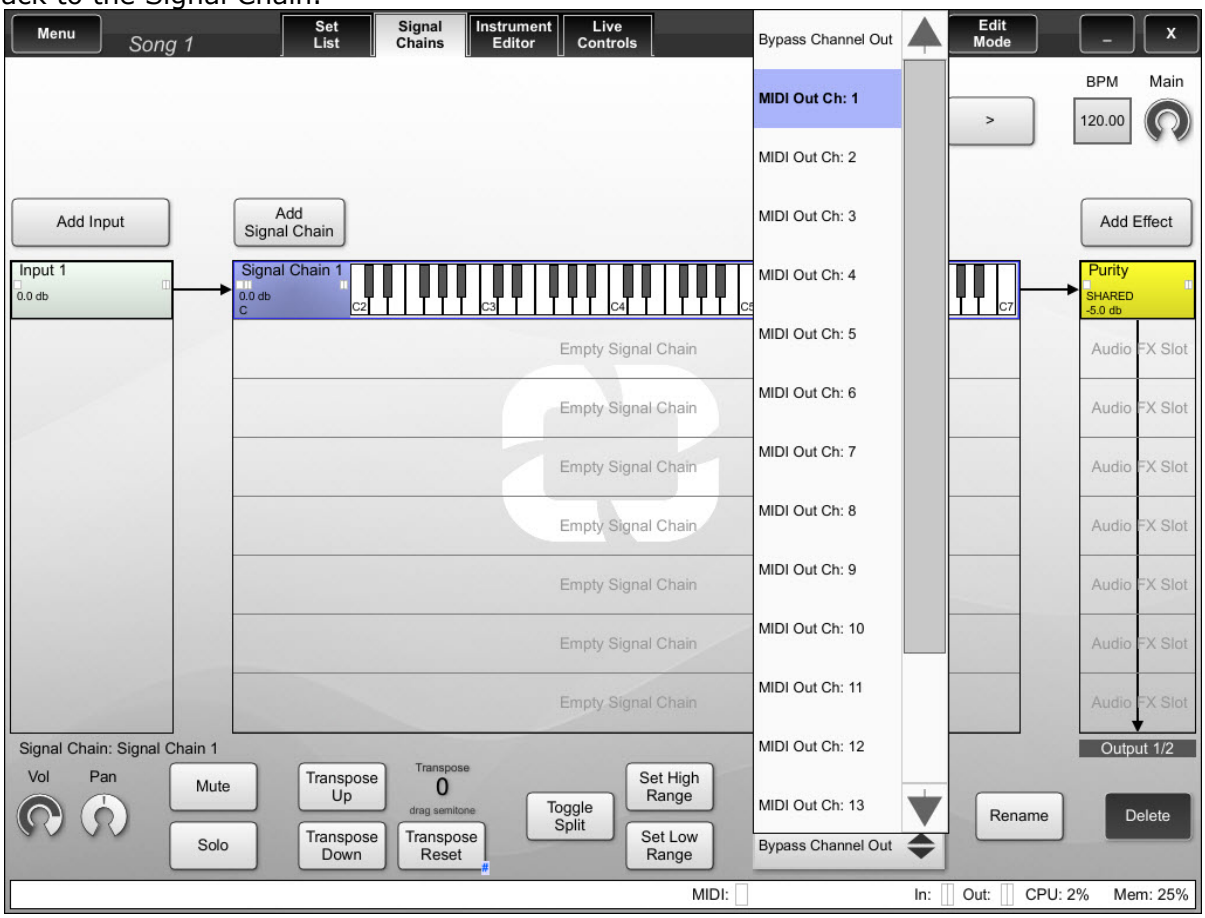


After the links have been unchecked

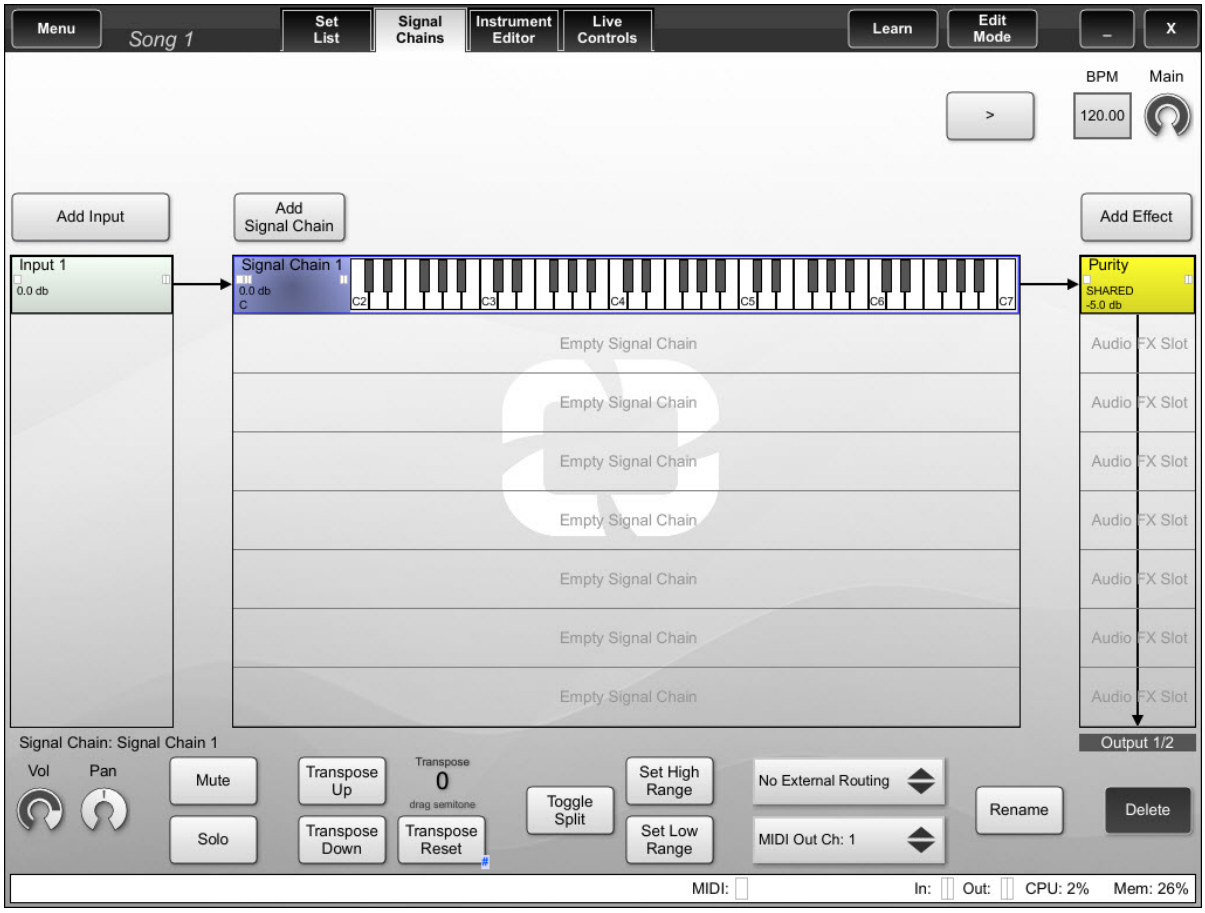


Other VSTi's will have dfferent sets of rules, however the basic principles will relate. Purity can use 16 instruments at once over a spread of 16 MIDI channels. Select sounds for the one through four slots of Purity. These channels will also represent the corresponding MIDI channels.

Go back to the Signal Chain.



Song 1 should only use MIDI Channel 1. On the Signal Chain page click the [Bypass Channel Out] button in the lower controls and select MIDI channel 1. (See the prevous image)

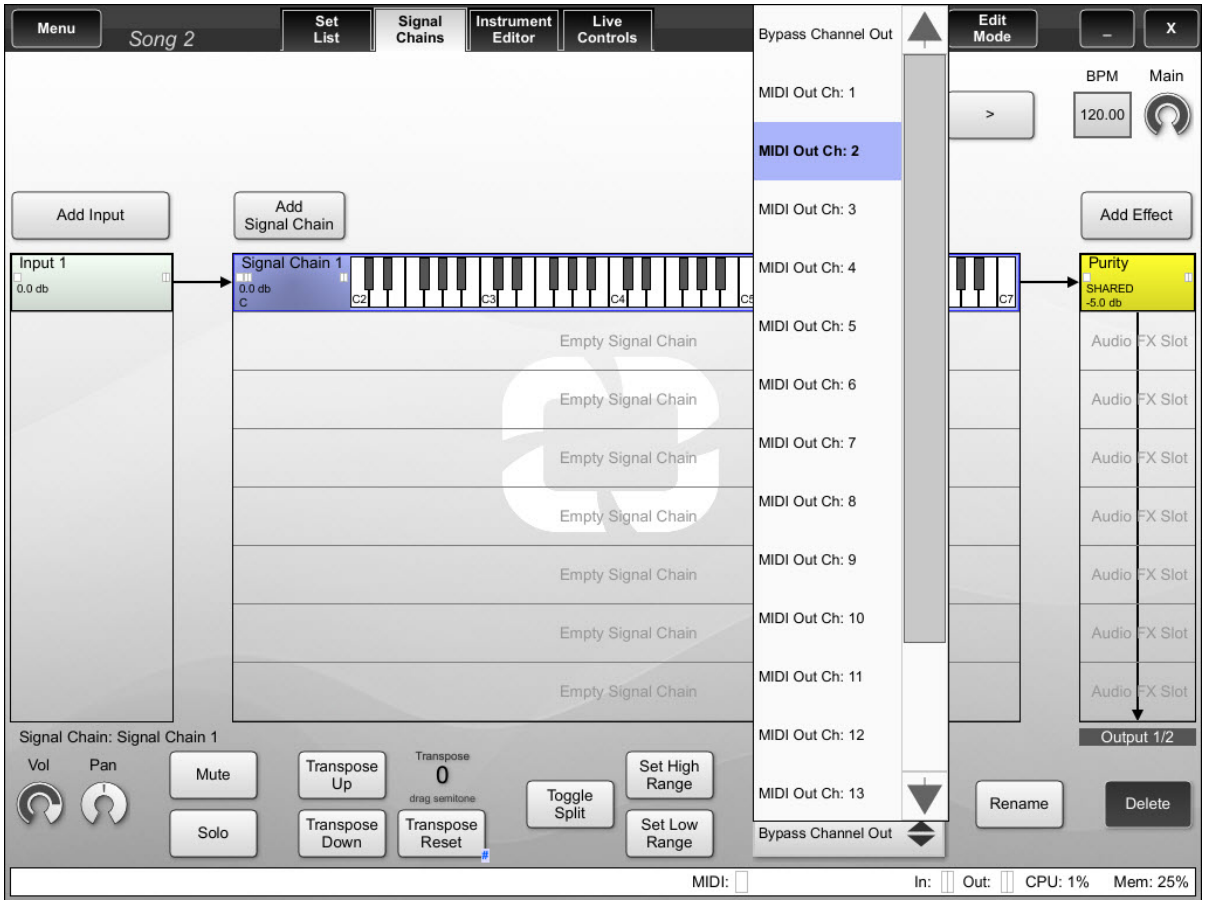


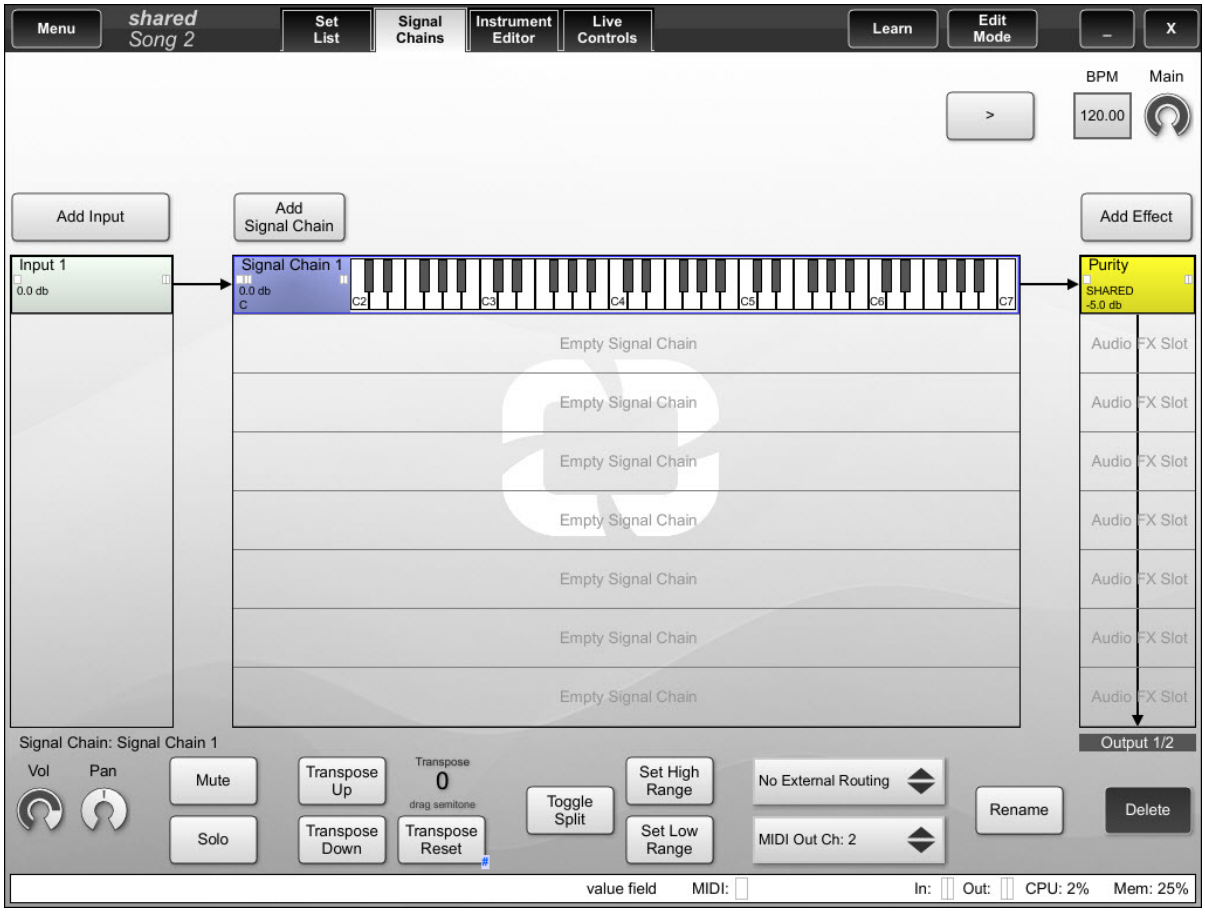
You can see this signal chain is using MIDI channel 1. And will only trigger the sound in MIDI channel 1 of Purity.

Now go to Song 2 on the setlist, and select the [Signal Chains] tab.

Go to the Signal chain of Song 2. Remember this Song is using a "Currently Loaded" shared version of Purity.

We want this Song and Signal Chain to only use MIDI Channel 2. On the Signal Chain page click the [Bypass Channel Out] button in the lower controls and select MIDI channel 2.





You can see this signal chain is using MIDI channel 2.

Using a multi-timbral instrument this way saves system performance and memory.

Now go back to the Setlist and [Add] another Song (Song 3), as before use a "Currently Loaded" version of Purity. Go to the [Signal Chains] tab of this Song and set it to MIDI channel 3. This will trigger whatever sound you selected for the third slot of Purity.

For the fourth Song, go back to the Setlist and [Add] another Song (Song 4), as before use a "Currently Loaded" version of Purity. Go to the [Signal Chains] tab of this Song and set it to MIDI channel 4. This will trigger whatever sound you selected for the fourth slot of Purity.

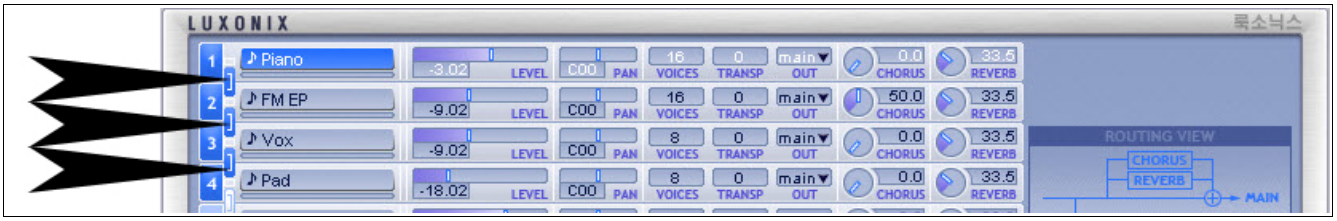
Now, when you switch Songs on the Setlist, the selected Song will trigger the adjacent channels in Purity or whatever multi-timbral instrument you are using.

Creating Keyboard Splits with Multi-timbral Instruments

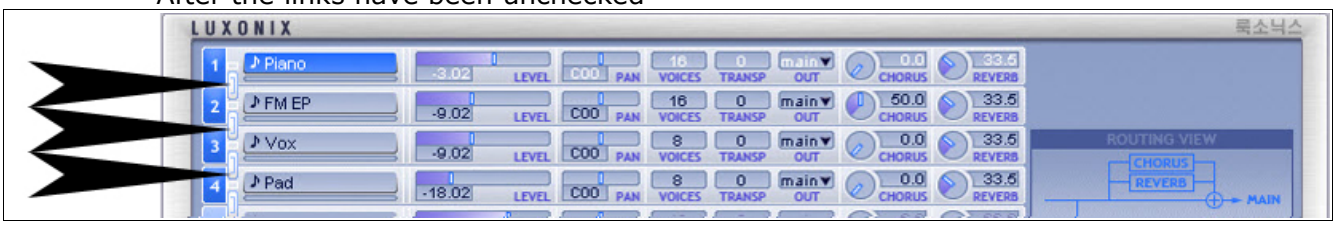
For this tutorial, Purity will be used. Create a Song and add Purity as the instrument.

Select the [Instrument Editor] tab then click on the channel link icons in Purity. If this is not done, each pair of MIDI channels will remained linked together.

Before the links are unchecked



After the links have been unchecked



Other VSTi's will have dfferent sets of rules, however the basic principles will relate. Purity can use 16 instruments at once over a spread of 16 MIDI channels. Go ahead and select sounds for the one through four slots of Purity. These channels represent MIDI channels.

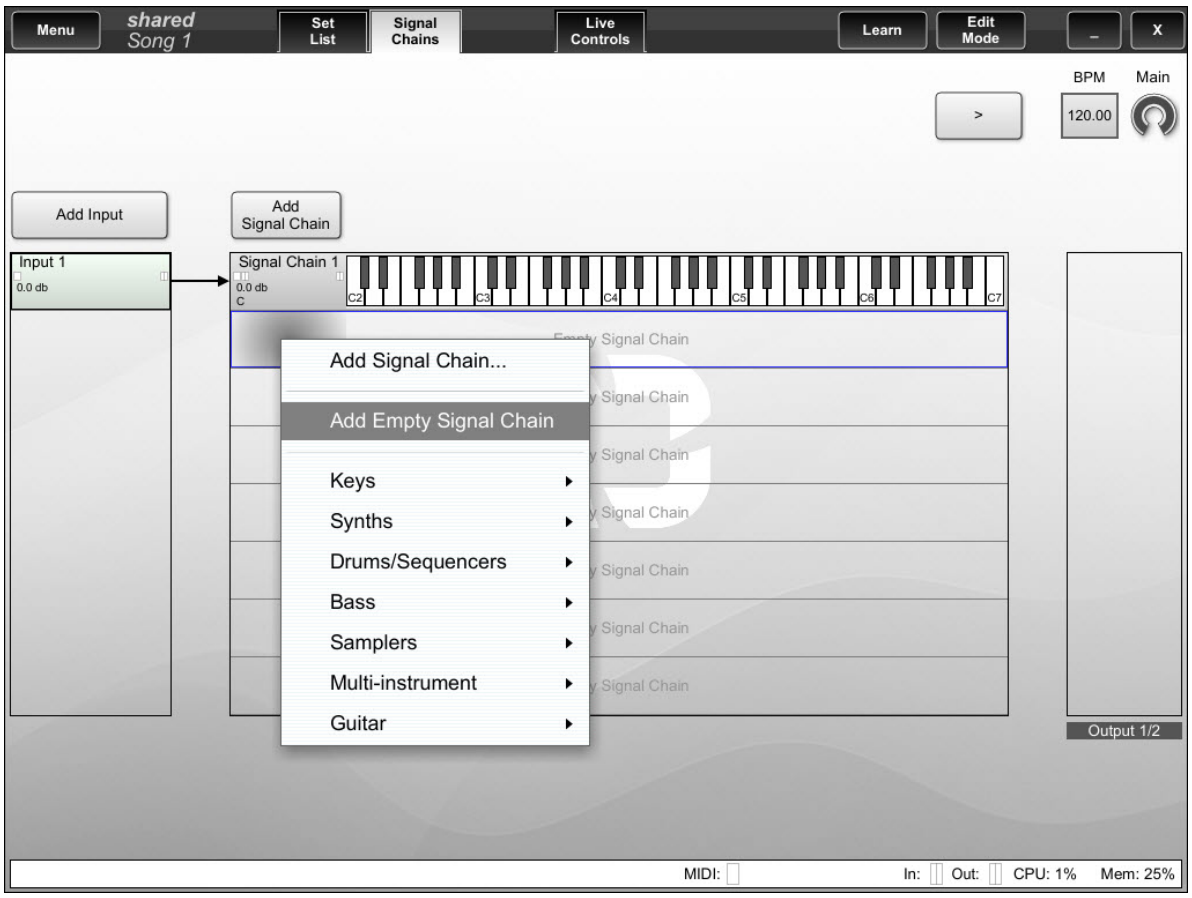
For this tutorial the instruments in the first four MIDI channels of Purity are

1. Piano MIDI channel 1
2. FM - EP MIDI channel 2
3. Vox MIDI channel 3
4. Pad MIDI channel 4

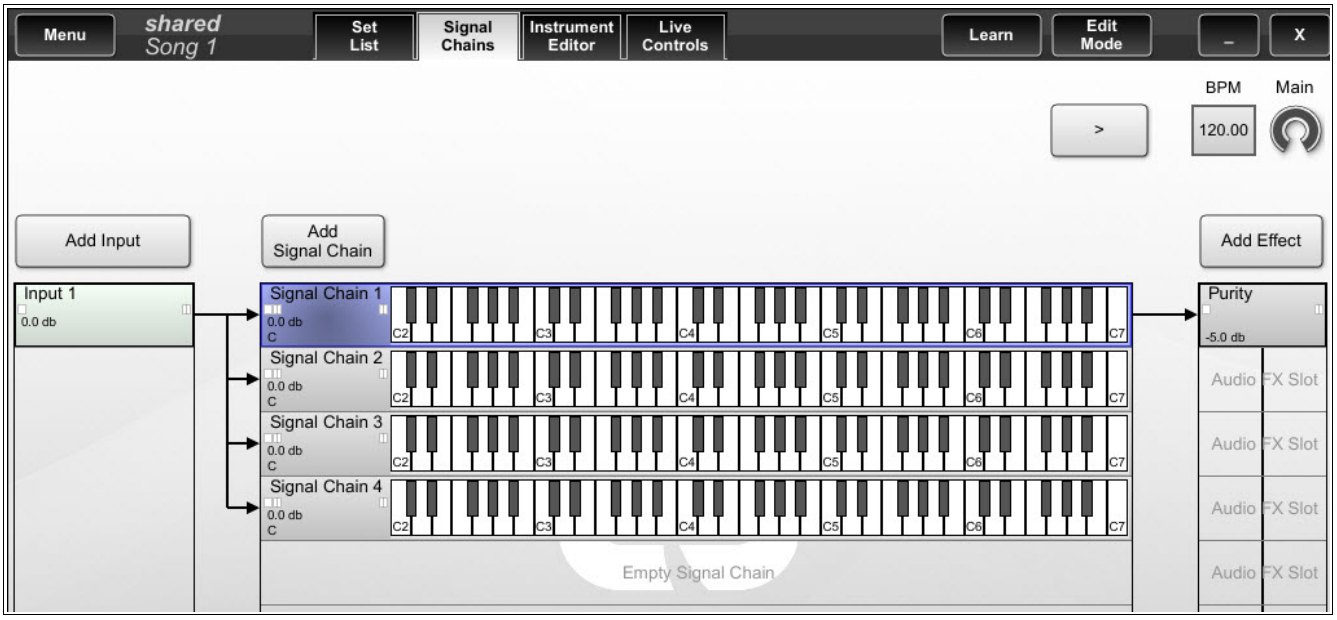
We will create splits in the signal chain to match these sounds and MIDI channels.

Go back to the Signal Chain and add three "Empty Signal Chains". Refer to the instructions and images on the next page.

To add an empty signal chain, click in the first empty signal chain slot. From the menu select [Add Empty Signal Chain]. Add three empty signal chains below "Signal Chain 1".

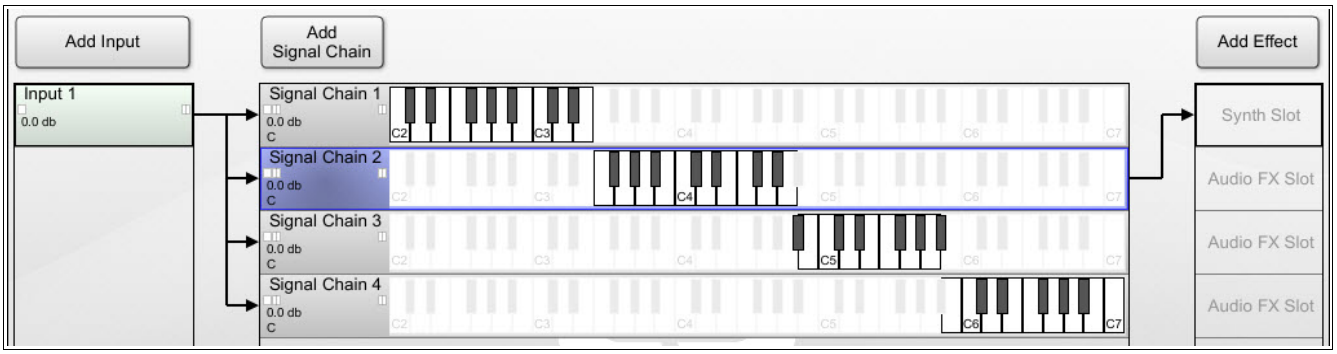


As you can see in the following image, there are three additional signal chains stemming from Signal chain 1.



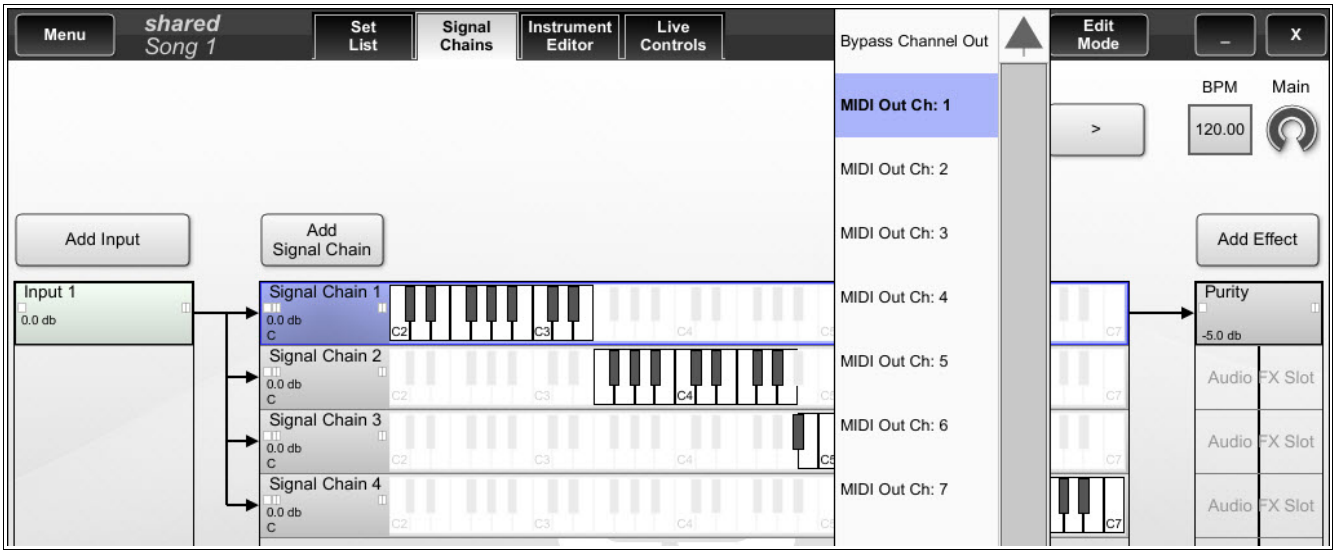
Next, the Signal Chains need to be routed to the proper MIDI channels. And the splits set up for the four chains.

Go ahead and set an array of splits similiar to this. Of course if you are on a Miko, you will need to make your splits closer together, or just use the transpose buttons to reach those octaves.



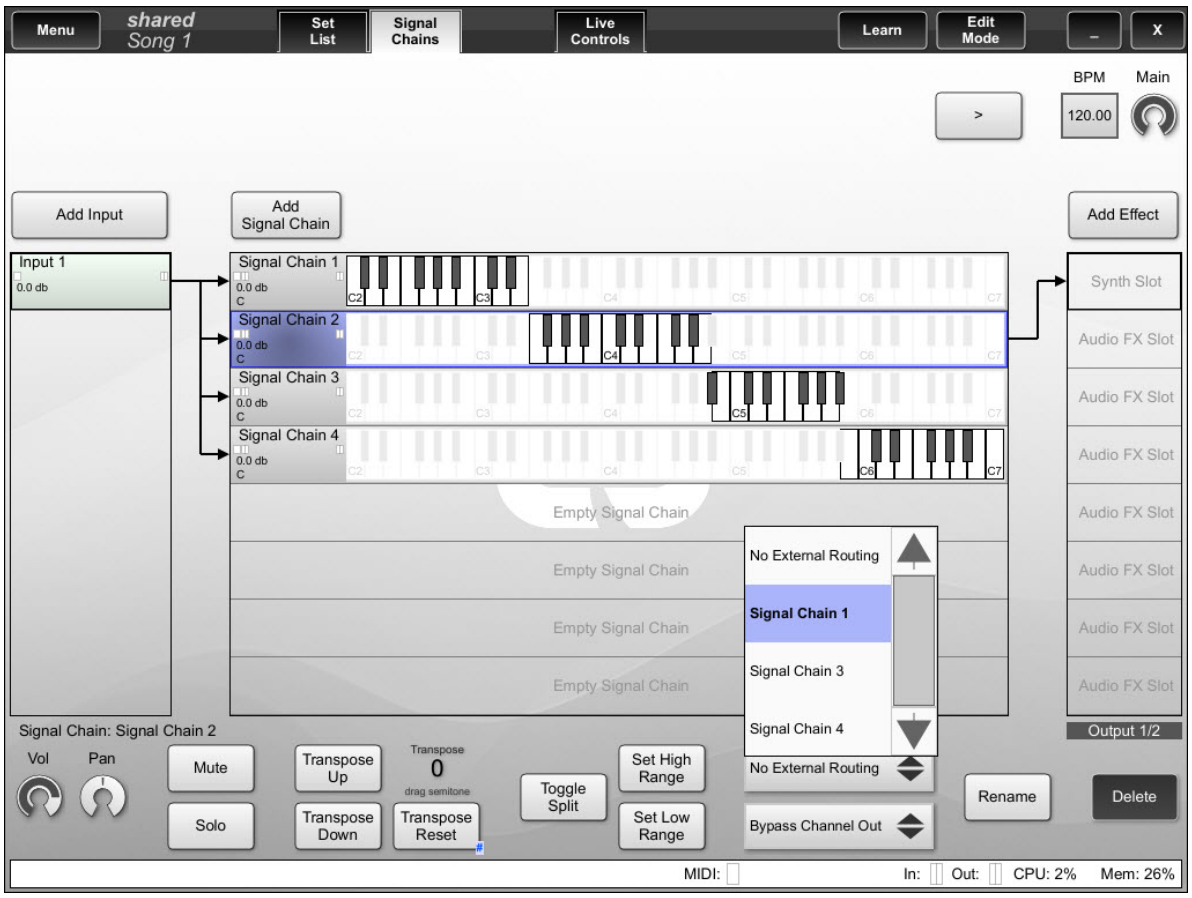
Each split needs to be set to an individual MIDI channel. Signal chains two, three, and four need to be routed to the first signal chain. Since two through four are empty signal chains they need to be routed to Signal Chain 1, this gives them access to the sounds in Purity.

Click [Bypass Channel Out] in the lower controls section and set Signal Chain 1 to MIDI out Ch: 1.

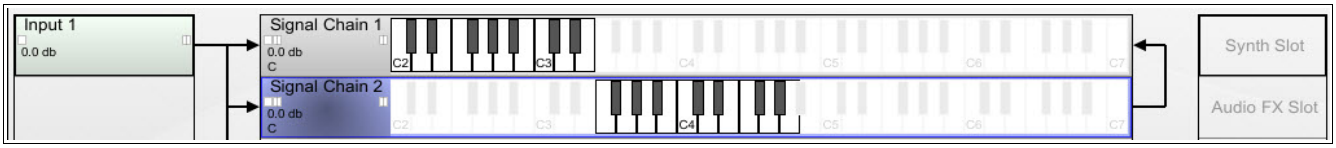


Next, signal chains two, three, and four, need to be routed through Signal Chain 1 which contains the instance of Purity.

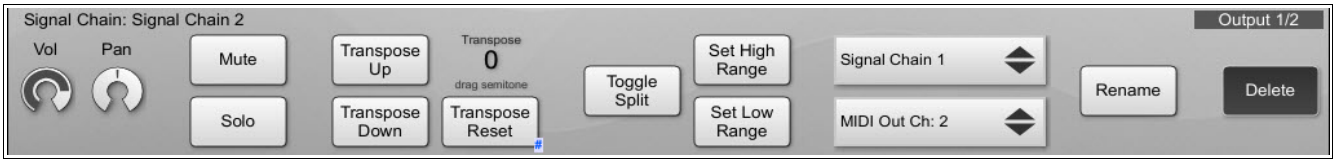
Select Signal Chain 2. Click [No External Routing] in the lower controls section and select "Signal Chain 1". And while you are there, go ahead and set the channel out to MIDI channel 2.



Once the routing has been assigned, you will see that Signal Chain 2 is routed directly through Signal Chain 1.



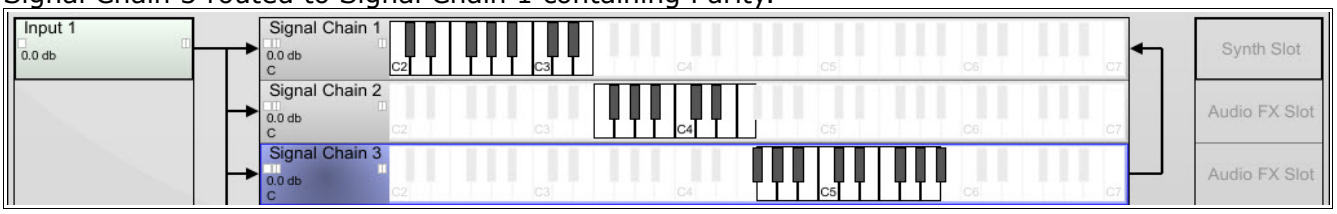
In the lower controls section of Signal Chain 2 you will also see that the routing and MIDI channel out options are properly set.



Go ahead and route signal chains three and four to Signal Chain 1, and MIDI outs to channels three and four respectively.

Follow the same procedure that was used to set Signal Chain 2.

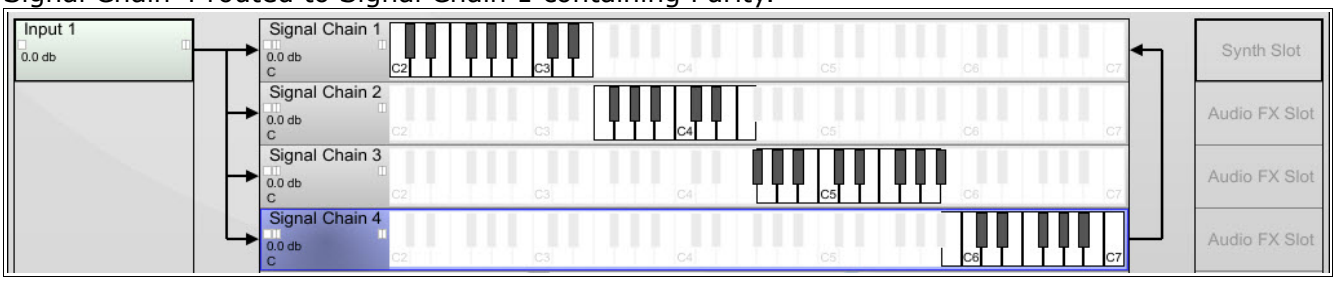
Signal Chain 3 routed to Signal Chain 1 containing Purity.



Signal Chain 3 lower controls, MIDI channel out set to channel three.



Signal Chain 4 routed to Signal Chain 1 containing Purity.



Signal Chain 4 lower controls, MIDI channel out set to channel four.



This will complete this multi-timbral setup, each split should be triggering the patch that you have in the corresponding channel of Purity.

Advanced Multi-timbral Instruments / Signal Chain

Now that you have a good idea of how to use multi-timbral instruments, it is time to learn an advanced way to setup Riff to work with your multi-timbral instruments.

As you can see in the Signal Chain, there are only eight slots . Plus, the signal chains are made for layering sounds, and creating keyboard splits.

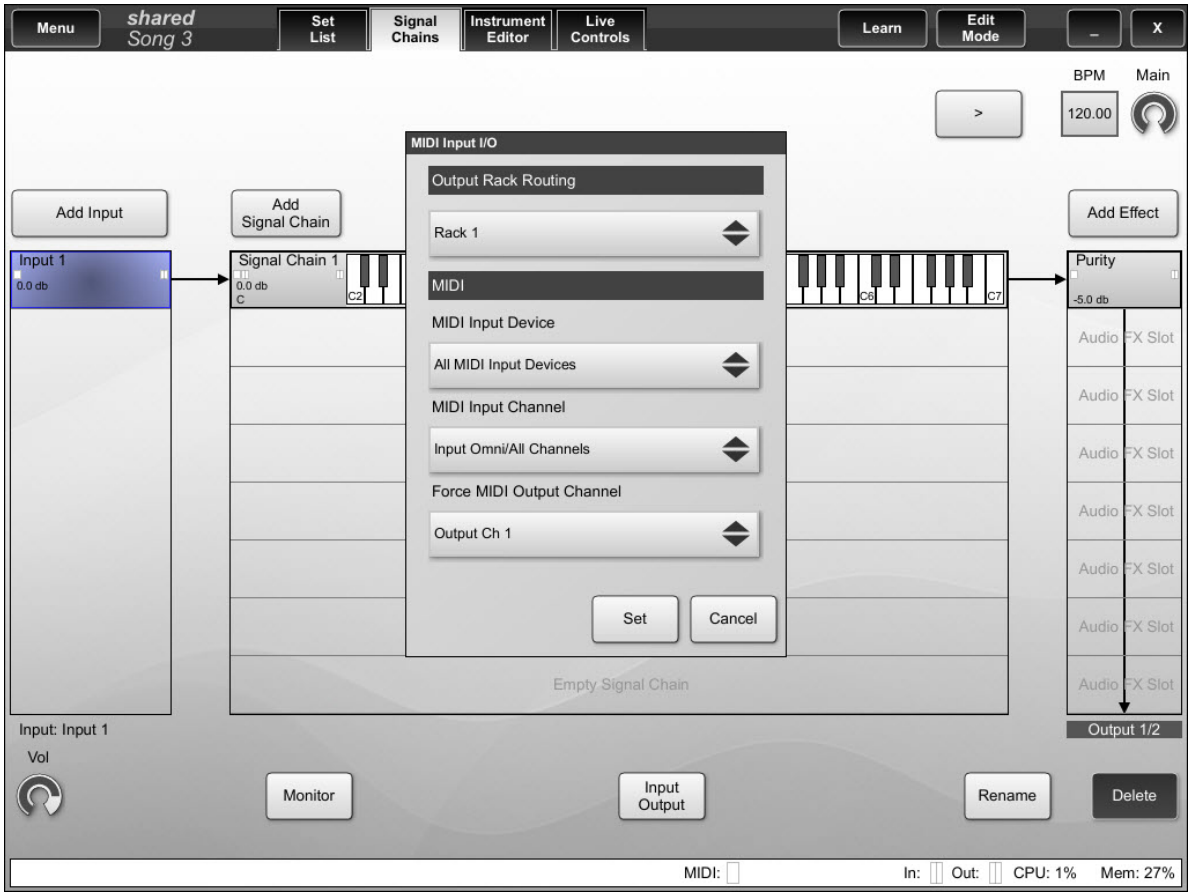
Let's say you wanted to use all 16 MIDI channels of a multi-timbral instrument in one Song, as opposed to setting up 16 songs each using a different MIDI channel.

The earlier tutorial explained how to do it that way. However, it is good to know the different ways to setup instruments in Riff.

Setup a new Song, and again, add Purity to the Song.

Remember to unlink the MIDI channels in Purity. Go head and assign sounds to some channels.

Go to the signal chain, select the "Input" for Signal Chain 1. This Input needs to only use MIDI channel 1. The input can be forced to use a particular MIDI channel by pressing the [Input Output] button located in the lower controls section. Do this and the "MIDI Input I/O" option box appears. Set "Force MIDI Output Channel" to "Output Ch 1".
Then press [Set].



This forces the input to only use MIDI channel 1.

Since you can add virtually unlimted inputs to the Input Column, it is the ideal section to setup a multi-timbral instrument in a song.

Every additional input we add to this song will be setup to use the instance of Purity in the first input slot. Again this will save lots of system resources.

Now it is time to add some inputs to use for accessing the MIDI channels used in the first inputs instance of Purity.

Click the [Add Input] button and select [Add Empty Instrument Input].



Once that empty input has been added and the Input is selected the Signal chain area remains empty. That is ok, the next page will show you how to assign the proper options.



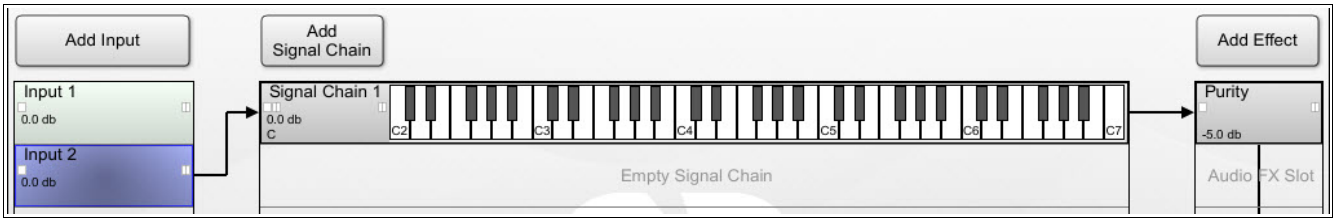
With Input 2 selected, click the [Input Output] button located in the lower controls section. To allow this input to access the MIDI channel 2 of the Purity instance in Input 1, select the following options.

Under "Output Rack Routing", select Rack 1, and under "Force MIDI Output Channel", select "Output Ch 2".

Then press [Set].

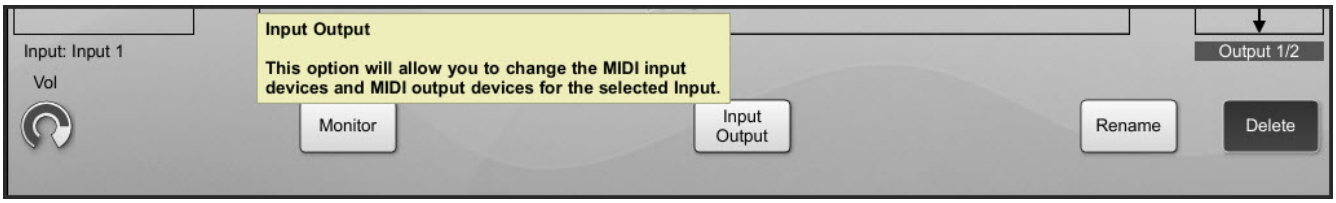


The following image shows that Input 2 is routed to the Signal Chain 1 instance of Purity. Now, whatever sound you add to MIDI channel 2 of Purity will be triggered by Input 2.



From here you should be able to add more Inputs and experiment with the settings.

MIDI Input I/O Options Window



Pressing the [Input Output] button in the lower controls section brings up the "MIDI Input I/O" window.



- *Output Rack Routing*: Allows you to pick which Rack the selected Input should route to.
- *MIDI*: Various options for per Input MIDI routing.
  - *MIDI Input Devices* - Whatever MIDI input devices you enabled in the main MIDI setup options for Riff will be present here. You can also set an MIDI-in for a connected external MIDI controller to play the sound in the selected input.
  - *MIDI Input Channels* - Choose the MIDI Input Channel for the selected Input.
  - *Force MIDI Output Channel* - This option enables the selected input to send MIDI out on a particular MIDI channel.

Using Different Preset Sounds with a Shared Instrument

If you are sharing an instrument over multiple Songs, you will more than likely want to use different presets in each song.

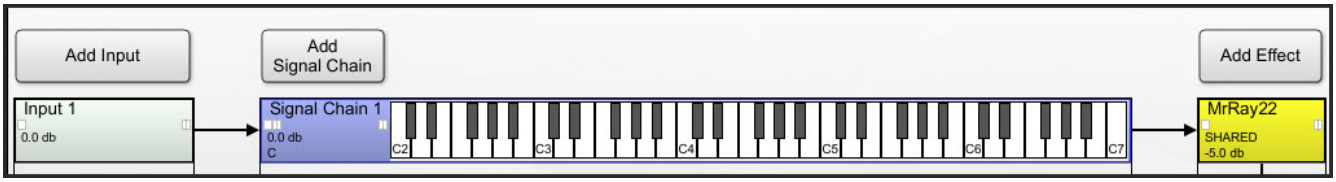
For instance, if you are using the patch "Mellow" from the plug-in Mr. Ray in Song 1, but in song two you also want to have Mr. Ray using a different patch. There is no need to add a brand new instance of Mr. Ray.

This next tutorial will show you how to do this.

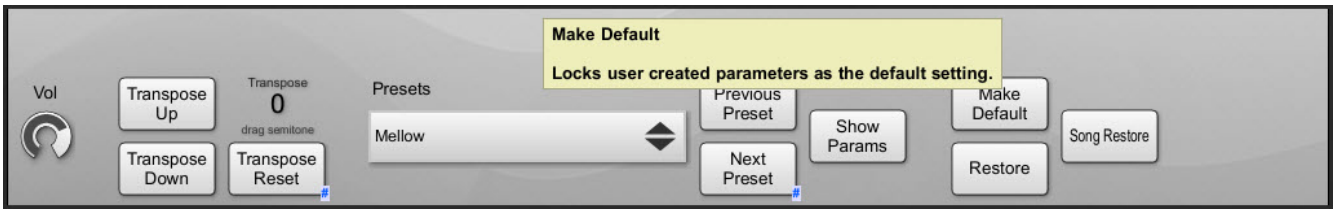
First off, select a spot directly beside the first Song on your Setlist and click "Add".

Once you reach the "Sound Browser" click the [Currently Loaded Plugins] tab. Here you will see your list of loaded instruments. Instead of loading a new instance of Mr. Ray, select the currently loaded Mr. Ray and either press the [Add] button or double left-click the instrument. This is also how you share an instrument in Riff.

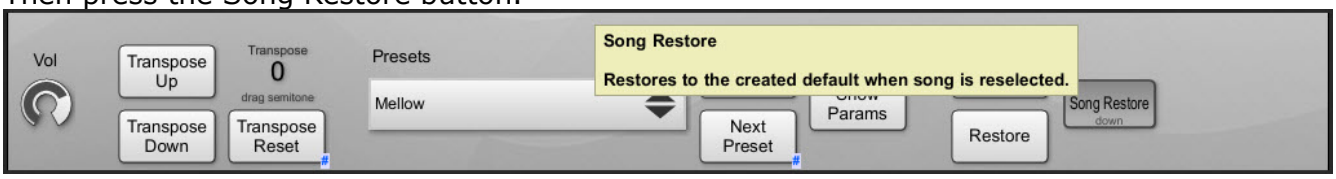
The next picture shows you what an Instrument looks like after "Shared" has been enabled. The Mr Ray icon in the Stream Processor is now yellow. This represents an instrument is shared.



Go ahead and jump over to the Instrument Editor of this song and set Mr. Ray to the patch "Mellow". Next, press [Make Default] in the lower controls section of the Instrument Editor.



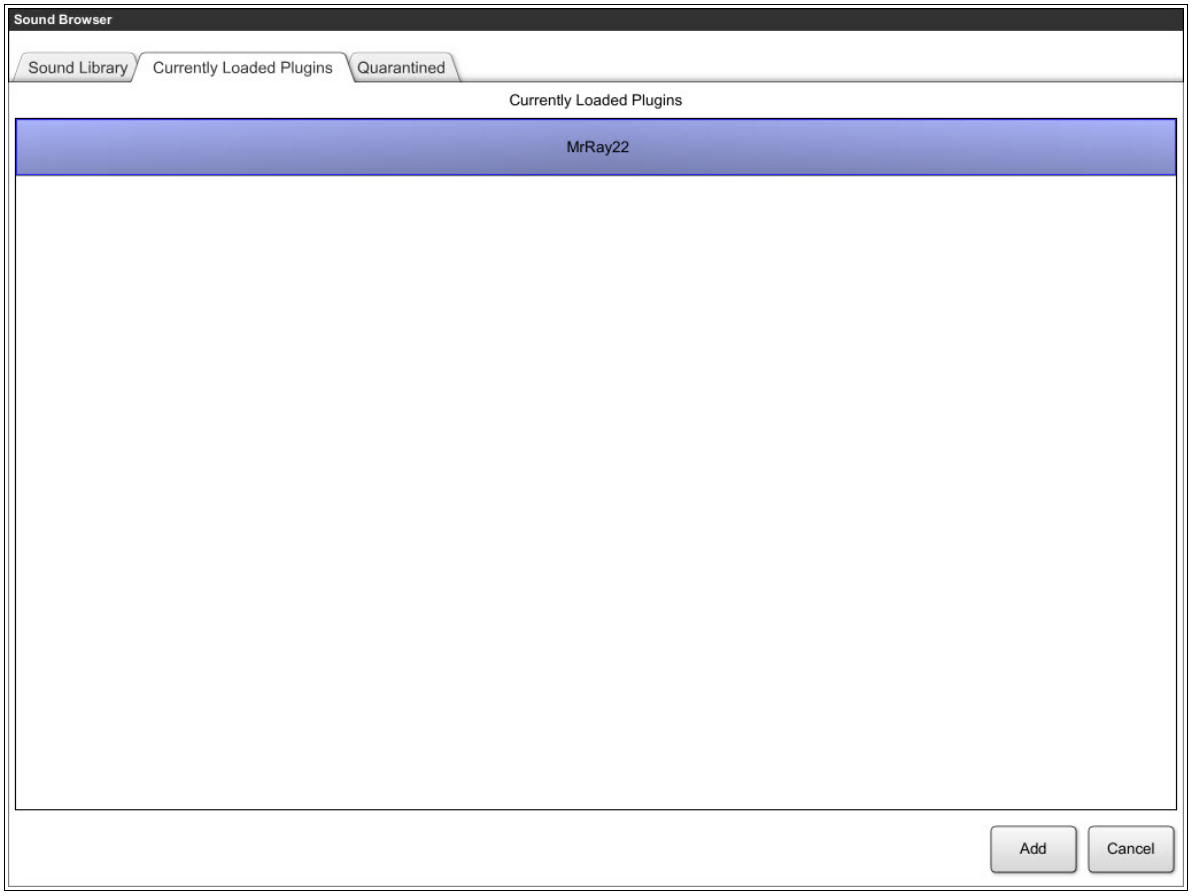
Then press the Song Restore button.



Doing this locks Song 1 to the preset Mellow.

Now add a second Song to the Setlist, but for this song instead of adding a new instance of Mr. Ray, select "ADD" on the Setlist, and go to the [CUrrently Loaded Instruments] tab and select "*MrRay22*".

Hit [Add].



Now, go the [Instrument Editor] tab of this new Song, and select a new preset patch. Then hit the [Make Default] button. After you hit the [Make Default] press the [Song Restore] button in this song.

That is all you have to do to have multiple Songs share the same instrument, while still being able to have a different sound from that instrument in each Song.

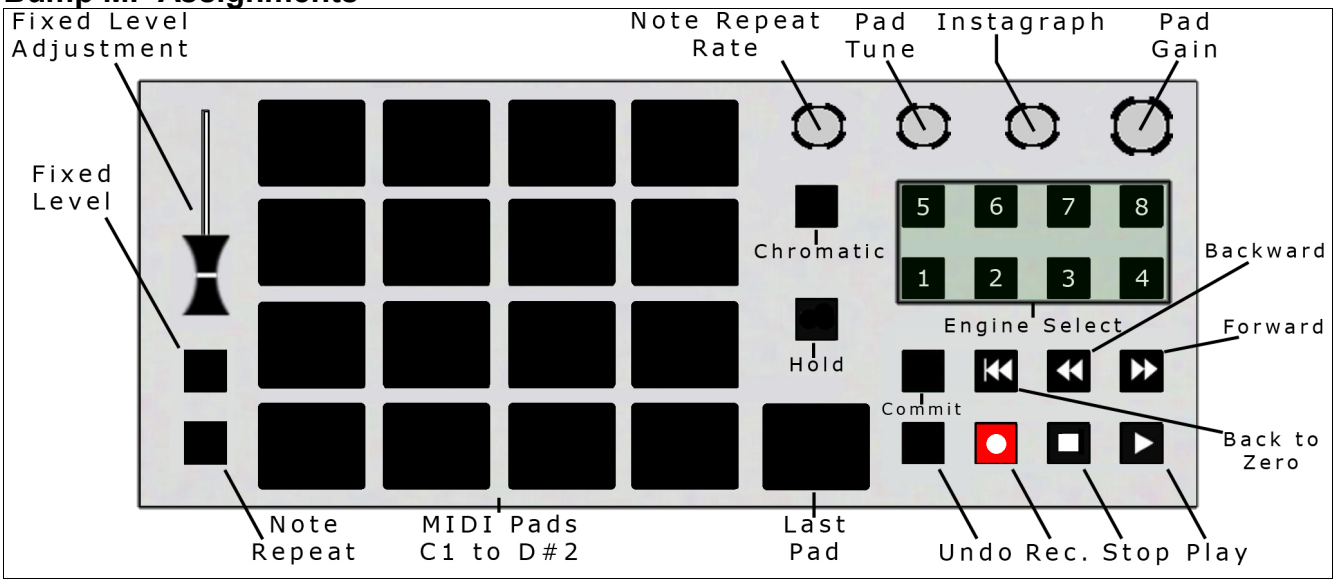
Here is a quick recap of this section.

1. Create a Song with any VSTi.
2. Go into the Instrument Editor and find a patch you like, then hit [Make default], then hit [Song restore].
3. Add a new Song, once you reach the "Sound Browser" click the [Currently Loaded Plugins] tab. Here you will see your list of loaded instruments. Instead of loading a new instance of an instrument, select the instrument that is to be shared, and either press the [Add] button or double left-click the instrument.
4. Go into the Instrument Editor of the new Song, find a new preset, Then hit the [Make Default] button. After you hit the [Make Default] press the [Song Restore] button in this song.
5. Now you can change songs while getting different sounds from the same plug-in.

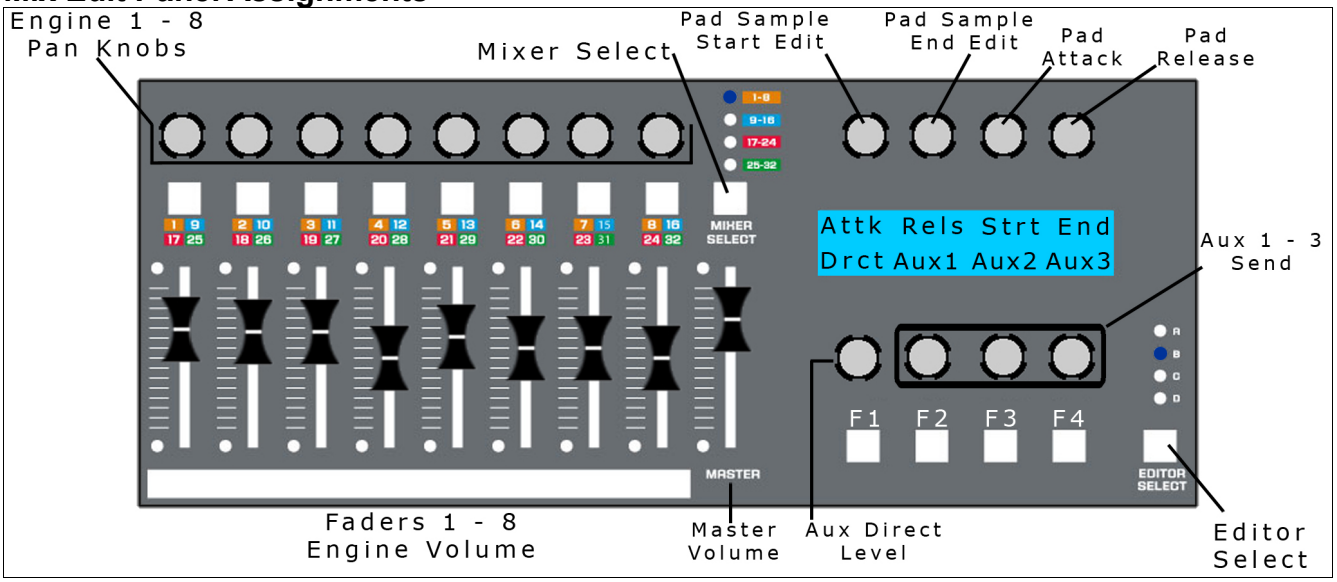
5 - Using Bump MP, Mix Edit Panel with Riff and Guru

The MiKo LXD offers an awesome new drum machine style rhythm tool. Using Bump MP, the Mix Edit Panel with Riff and Guru you will be able to create rhythms like never before. The following sections shows what controls what.

Bump MP Assignments



Mix Edit Panel Assignments



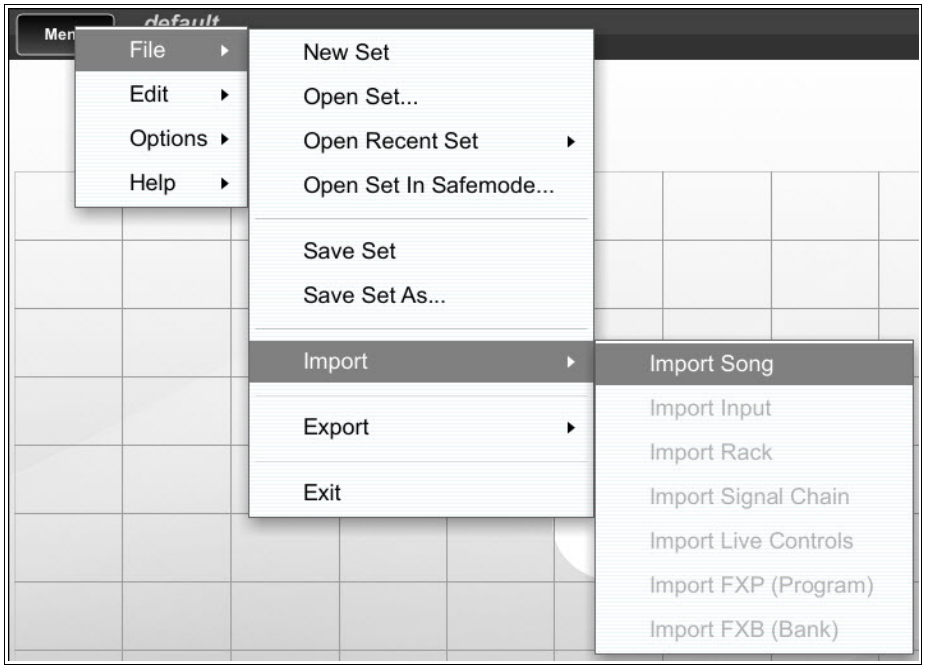
Bank B of the Mix/Edit panel is the default selection for BUMP MP inside of Riff and Guru. Please refer to the main Guru PDF document for complete instructions for this application. You can also get more information by visiting the FXpansion forum for Guru. (http://www.fxpansion.com/forum/viewforum.php?f=10)

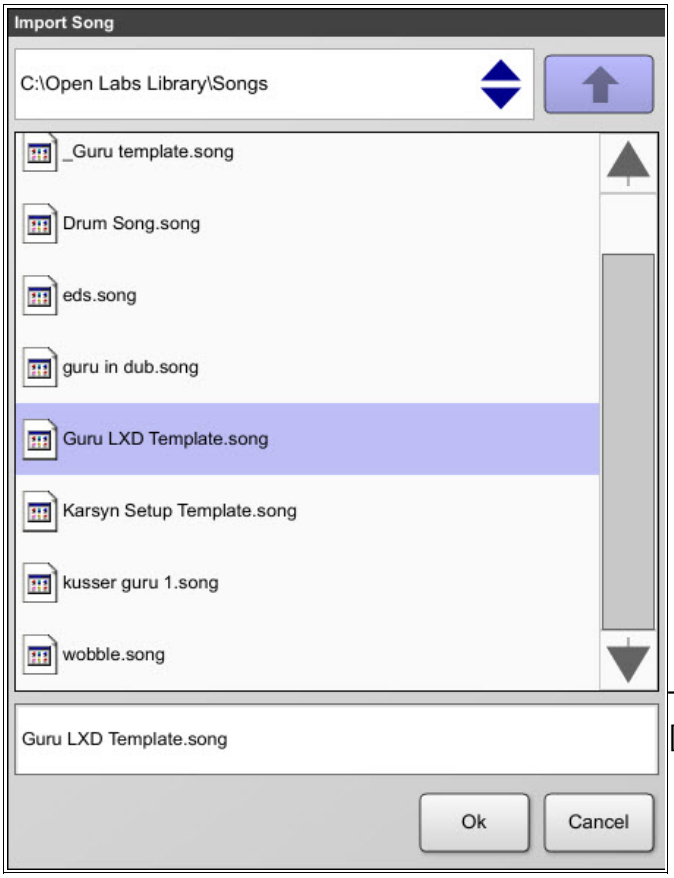
Importing the Bump MP/Guru Song Template

Since the pads, knobs, buttons and faders have to be pre-assigned to particular MIDI assignments, it is necessary to use the "Song Import" feature to load a song template.

This ensures everything is set to go. We have provided you with a blank Guru template which contains everything pre assigned. Aways be careful not to save over any of the default templates.

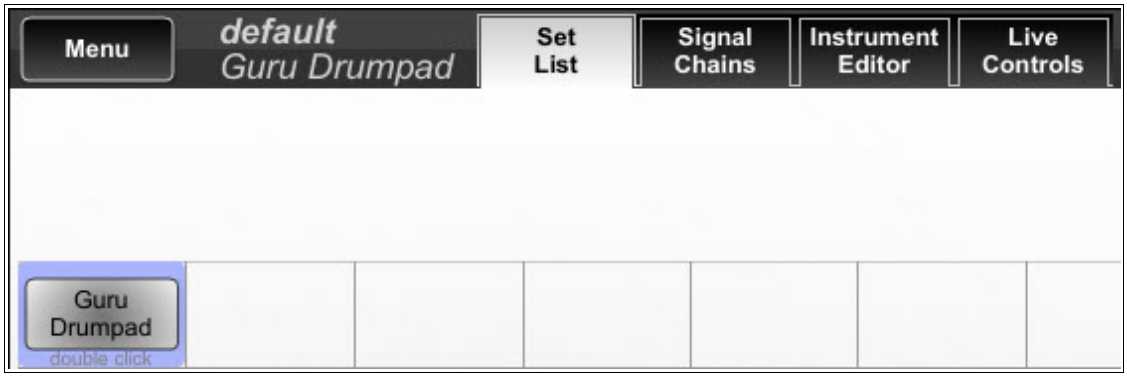
Go to Menu>Import Song





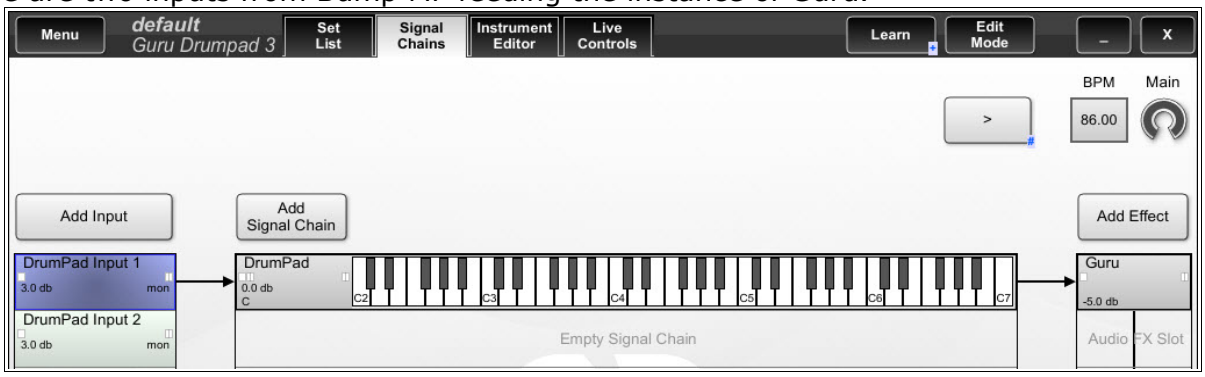
Then select "Guru LXD Template.song" and hit [OK].

This will import a Song with all the required components to use the Drum pads.

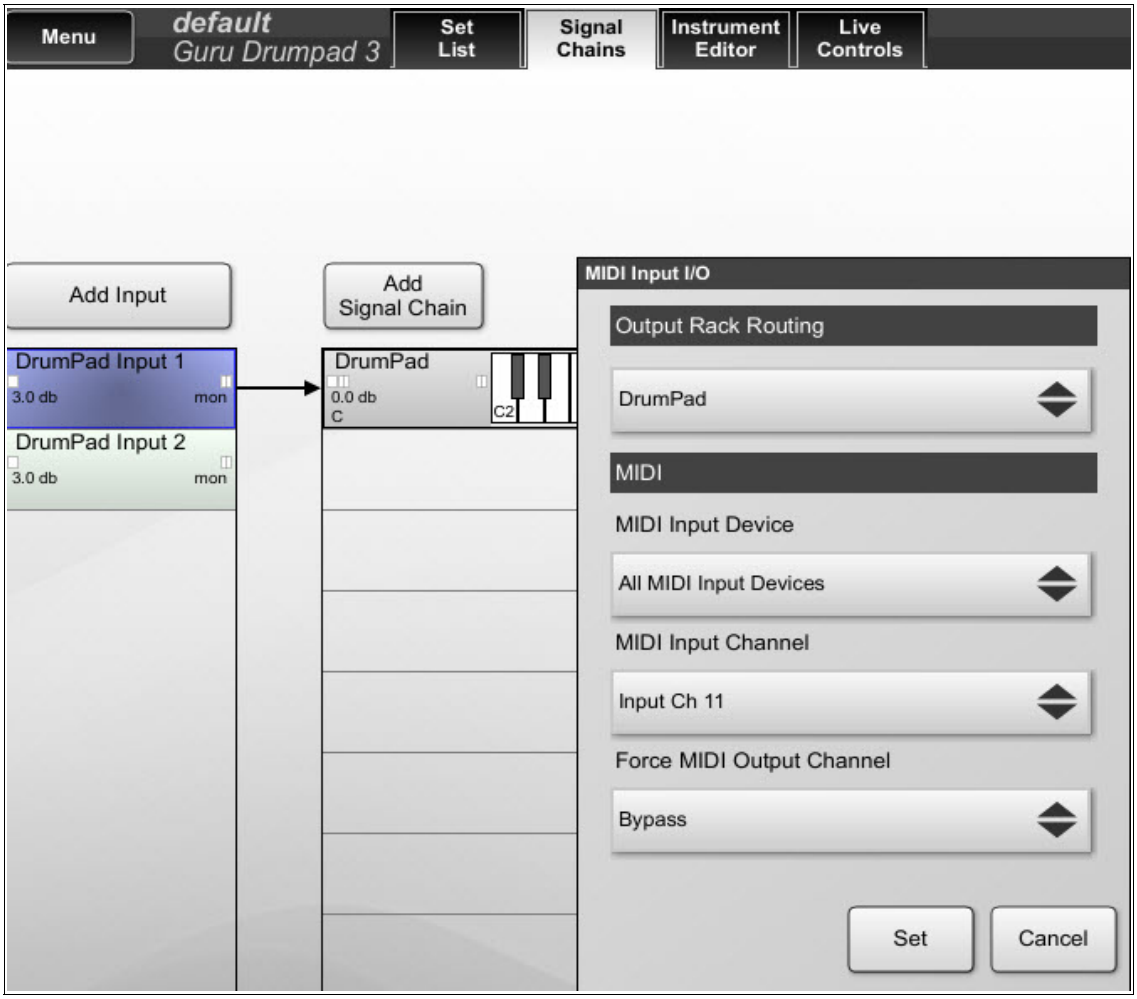


You can use Guru to record all your beats, or sequence samples. If you want to play other sounds while beats are playing back from Guru, it is suggested to use the [Play] button in Riff. Doing this ensures that all tempos are locked together. Changing the BPM in Riff also changes the tempo in Guru.

There are some technical things you should be aware of with this setup. Please read on for an explanation why we suggest you use Bump MP this way.
The following image shows what the Bump MP/Guru template song looks like in the Signal Chain.
There are two inputs from Bump MP feeding the instance of Guru.

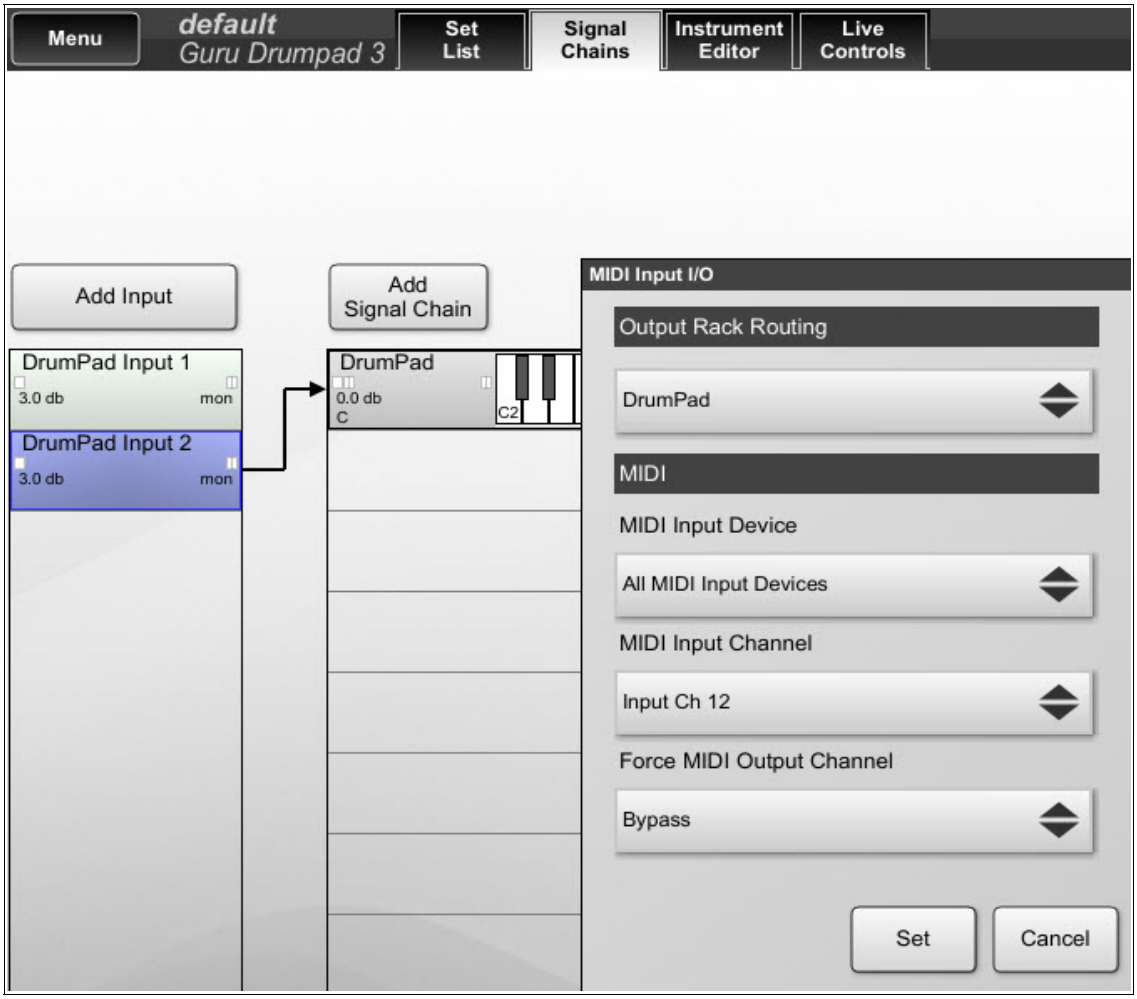


The first Input uses the following Input/Output options.



This first Input is what enables the Bump MP drum pads to "talk" to Riff.
If you look at the "MIDI Input Channel" for this Input, you will see that Input Ch 11 is selected. This isolates the drum pads from receiving MIDI from any other channel or device not using MIDI channel 11.

The second Input uses the following Input/Output options.



This second Input is what enables various Bump MP control buttons, knobs and the "last pad" drum pad to "talk" to Riff.

If you look at the "MIDI Input Channel" for this Input, you will see that Input Ch 12 is selected. This isolates the control buttons and knobs from receiving MIDI from any other channel or device not using MIDI channel 12.

GURU Quickstart: Engines, Pads, Patterns and Graphs

This section will introduce you to the application GURU, it is not intended to replace the GURU manual. After reading this section, please refer to the complete GURU manual which is located on your MiKo LXD's hard drive.

These concepts are crucial to the way that GURU works, so it's very useful to read through the following descriptions.

Engines

GURU is made up of eight 'Engines'. Each of these Engines contains 16 Pads. Although these Pads can be sequenced from your host sequencer using MIDI notes, they can also be controlled by each Engine's advanced step sequencer system. There are sequencers for Pads (the Pattern view) and for modulating certain sound parameters (the Graph view). An Engine is essentially an independent entity with its own MIDI channel (they respond to channels 1-8), although the tempo of all Engines is locked to multiples of Engine 1's tempo.

Each Engine also has 3 Aux effects and an Insert effect. There is also a Master Insert effect which affects the entire Master output.

Pads

The 16 Pads inside each of GURU's Engines are categorized into Kicks, Snares, Hihats and Percussion, with 4 Pads assigned to each type. This is central to SmartSlicing: GURU's intuitive new approach to loop-slicing.

Each Pad is a sophisticated sampler with a substantial array of parameters that can be adjusted in the Pad Edit view, which is a tweaker's paradise. You can layer (either stacked or velocity-layered with crossfades) up to 8 samples on a single Pad, adjust start/end points, gain, pan, pitch and filtering, add one of the built-in effects or adjust send levels to any of the 3 Engine Aux effects. There are also 2 envelopes to play with in the Pad Edit view: one for amplitude and one for filter cutoff, pitch and certain effects destinations.

The Pads are mapped to MIDI notes C1 to D#2 by default.

Patterns

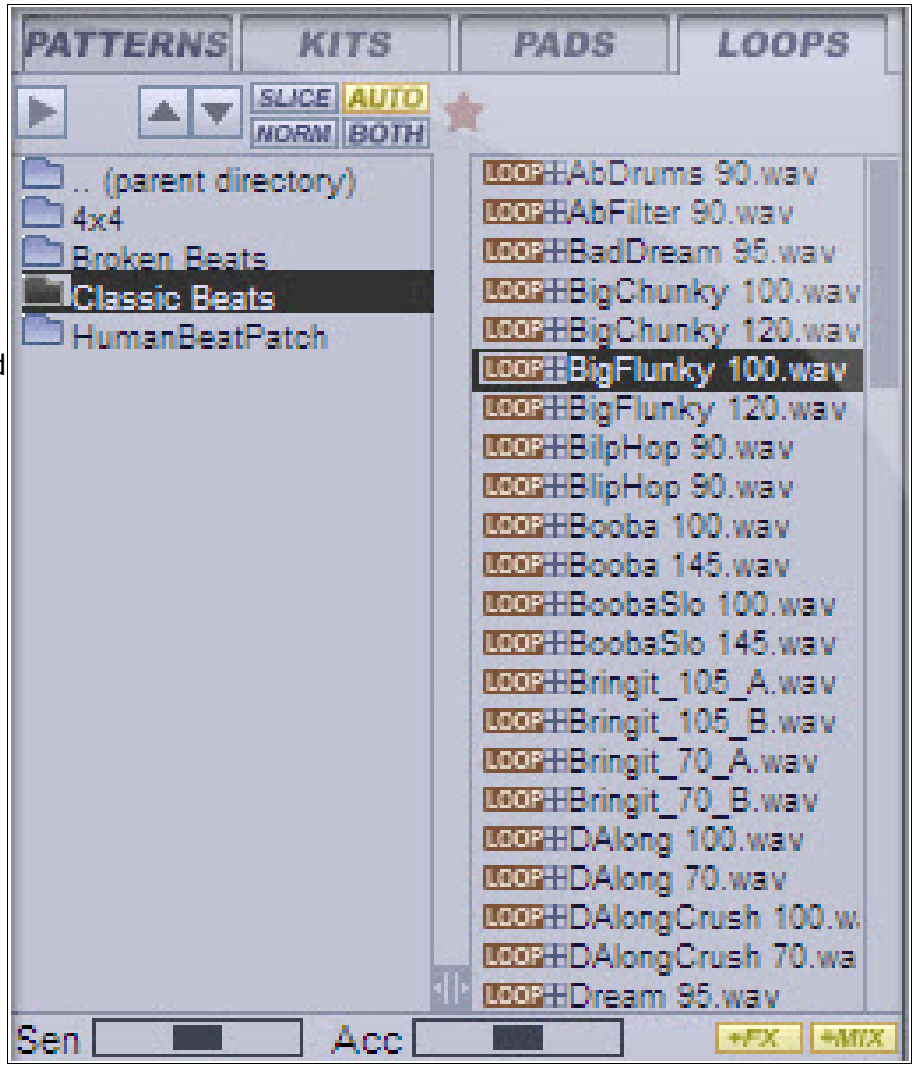
The Pattern view is for step-sequencing Pads. The sequencer can have up to 16 pages, each with up to 32 steps, giving a total of up to 512 steps. Each sequence is called a Pattern: each Engine in GURU has 24 Patterns, assigned to MIDI keys from C3 to B4. Click on the Pattern keys, or hit the corresponding MIDI key, to access any of the 24 Patterns for each Engine.

While all the Engines are tempo-synchronized, Engines 2-8 have a tempo multiplier setting which adjusts the tempo for each Engine relative to the main tempo (which is used for Engine 1). By using multiple Engines with different tempo multipliers, you can create complex multi-layered polyrhythms with ease.

GURU contains the ability to intuitively record Patterns, so you can use it as a complete workstation environment. This can be a breath of fresh air if you find yourself constrained by fiddly audio/MIDI sequencers, which have too many possibilities that sometimes get in the way of creativity. GURU even provides a Scene view, where you can store 'snapshots' of the state of all 8 Engines together, and change between them by using MIDI note input.

Slicer

We've given GURU's slicer a major overhaul – it is now much more accurate, and has a 'Sensitivity' control allowing you to adjust how it responds to possible hit points in your loops. In addition, its slicing and score extraction process is now velocity-aware - slices and scores are now generated in such a way that hit volumes are consistent when using the sounds from one loop with the score from another, or the score from a loop with a kit, or the slices from a loop with a pattern.



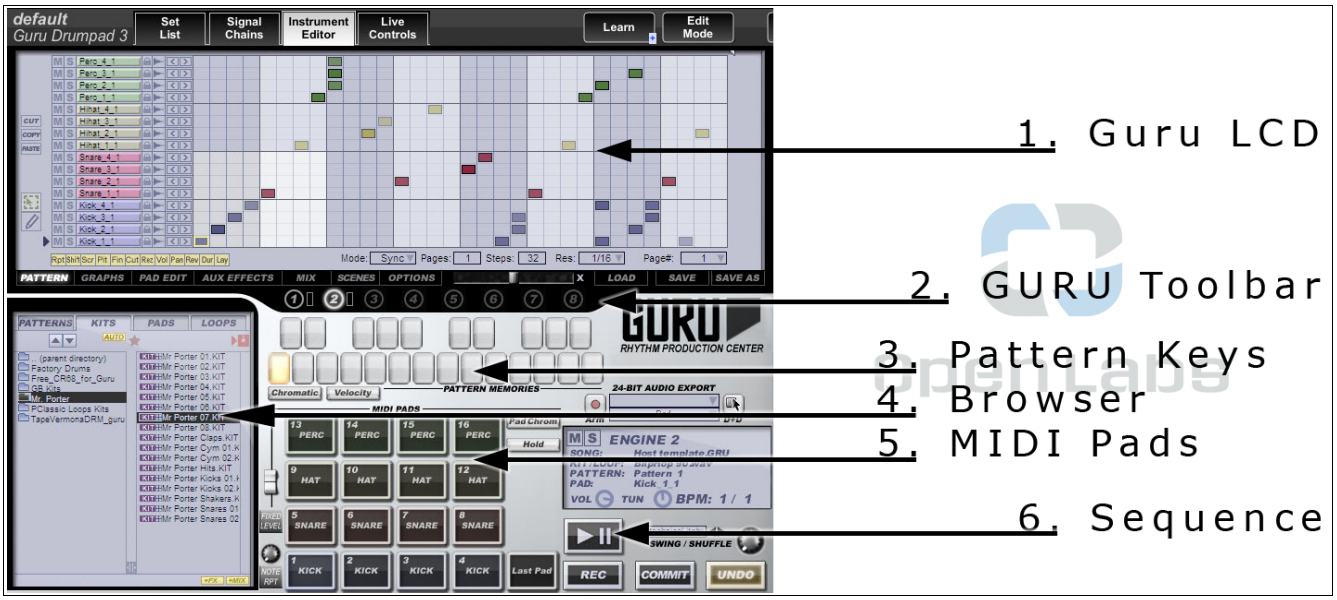
As well as the 'Sensitivity' control, there is also an 'Accuracy' control which specifies how much CPU time GURU should give to analyzing the slice points. Higher accuracy means more precise, but slower, slicing.

The Slicer can now be toggled between SINGLE mode, in which one slice is loaded per pad, and FULL mode, where up to 8 slices are loaded per pad, using the Layers. This allows Guru to fit long loops (up to 128 slices) in a single engine; it also supports a Linear Scoring mode where instead of smart-slicing by drum type, the slices are simply mapped to pads 1..16 in the order they occur in the loop file, much like a conventional slicer.

When slicing loops and generating Scores, the slicer is now velocity aware – each score note is assigned a velocity based on the loudness of the slice from which it was generated. This gives much more useful playback when replacing the slices for a given score with a pre-made kit.

"Equal 16ths" has now been replaced by a "CHOP" mode controlled by the sensitivity slider, allowing you to set a chop length from 1/4 note down to 64th note. Hold SHIFT to set the sensitivity control to non-power-of-2values in this mode (by default it snaps 4, 8, 16, 32, 64).

Overview of the GURU Interface



GURU LCD

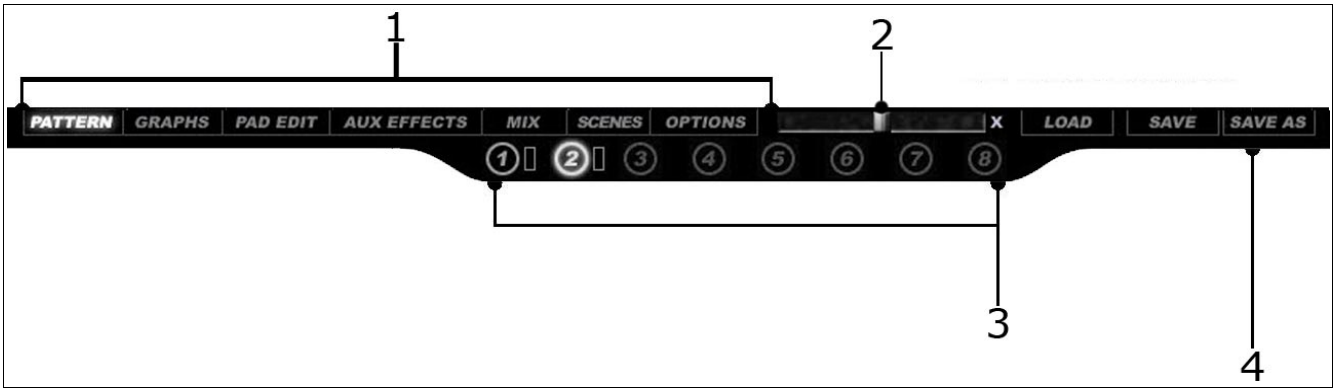
The LCD is the main edit area in GURU. It can be in any of the following view modes:

- Pattern view
- Graphs view
- Pad Edit view
- Aux Effects view
- Mix view
- Scenes view
- Options panel

Each of these view modes have a corresponding button in the GURU toolbar.

GURU Toolbar

The toolbar not only offers access to the different LCD view modes, but also to the Engine selectors and activity display. The Toolbar houses the Load/Save Bundle buttons. See chapters 8 & 11 for details on these features.



1. LCD view mode selectors

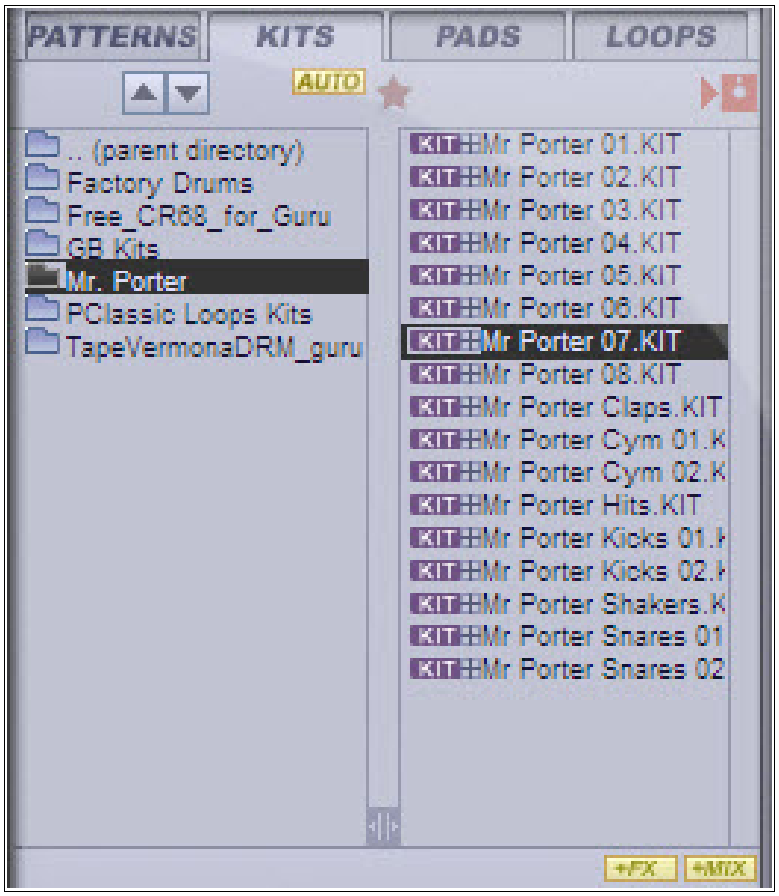
2. Randomizer
   - A new creative inspiration factory, the randomize slider can operate on any of GURU's main screens – sequence, graphs, pad edit, effects, mixer – and allows you to apply a controllable amount of randomization to either the current pad or various combinations. Click on the randomize slider to generate a new set of 'seed' values, then drag to the left or right to apply them progressively to your patch. Hold down ALT or SHIFT while dragging the randomize slider to apply the process over a wider area – if you don't like what you hear, just hit the Undo button to the right.

3. Engine selectors & activity display

4. Load/Save Bundle Buttons

Browser

This is where you load sounds and Patterns into GURU. See the main GURU chapter 2 for and in-depth look at the Browser.

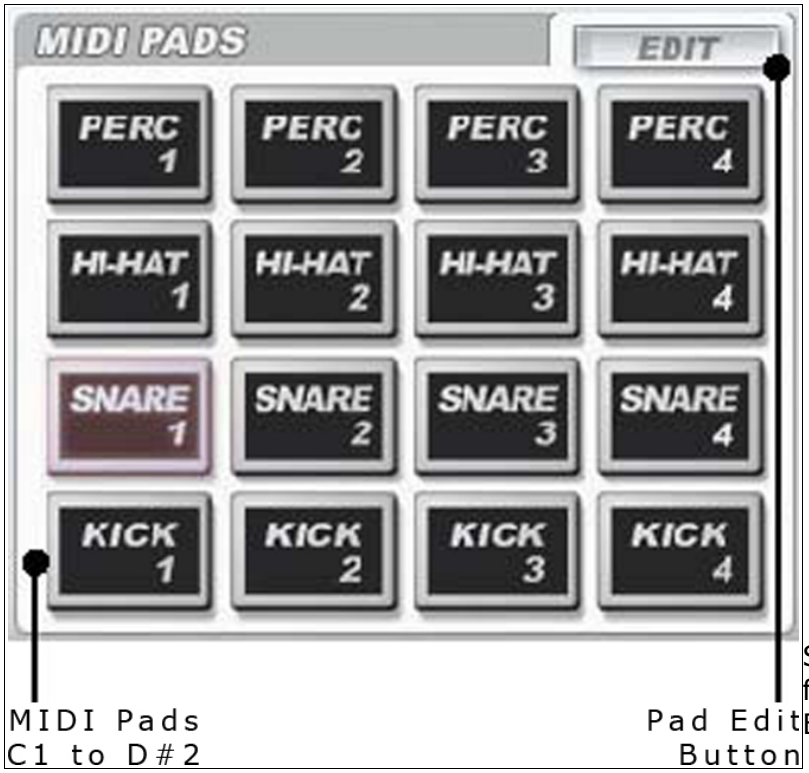


MIDI Pads

There are 16 MIDI Pads, with 4 assigned to each drum category (kicks, snares, hihats and percussion). They can be played by clicking them on-screen or by hitting their corresponding MIDI notes (by default, C1 to D#2).

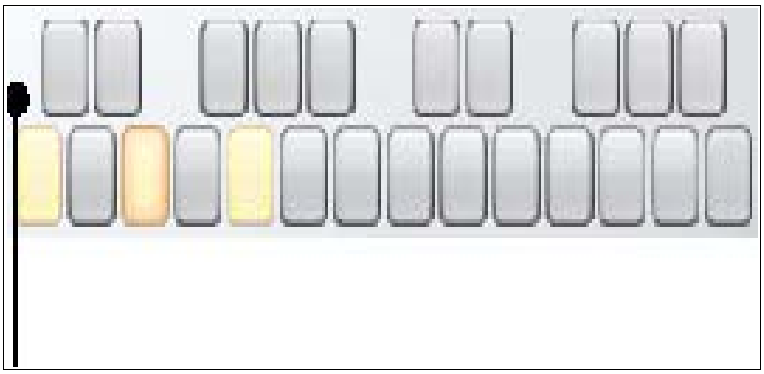
The Pads light up blue (kicks), red (snares), yellow (hihats) and green (percussion hits) in response to being played.

Pads are also selected for editing by clicking them. There is an Edit button just above the Pads for quick access to the Pad Edit view, or you can use the Pad Edit button on the toolbar.



See chapter 3 of the GURU manual for more details on Pads and the Pad Edit view.

Pattern Keys



(Above image) Pattern keys MIDI notes C# to B4

The Pattern keys are a way of selecting Patterns for editing when in the Pattern view, and also for playing them. They are mapped to MIDI notes C3 to B4.

See chapters 4 & 5 of the GURU manual for more details on Patterns.

Sequencer Master

The Sequencer Master section houses a convenient display for the current Engine,song, Pattern and Pad, as well as global volume, kit/loop,
tuning, mute, tempo and Groove controls for the current Engine.



It also contains the Undo button, and the Playback and Recording
controls.

Control Conventions and Keyboard Shortcuts

The UNDO button

GURU provides a one-level Undo function when editing Patterns. When there is something to Undo, you'll see the Undo button highlighted. Any operation which involves notes in Patterns can be undone –even loading Patterns from the Browser.

The Undo button is also used in Record mode, in order to Undo the last take. When in Record mode, this button can be controlled by a MIDI note. Keyboard shortcuts

GURU is quite heavily dependent on keyboard shortcuts, in order to facilitate quick edits and fast work flow. One very important shortcut to remember is [CTRL]-click, which is used for

numerous frequently used functions.

- [CTRL]-click in GURU is the same as the right mouse button.

  It is also worth remembering that [ALT] is a key modifier which results in modifying all similar parameters. This depends in many cases on what is being clicked. Please see section 11:2 for a full list of GURU's keyboard shortcuts.

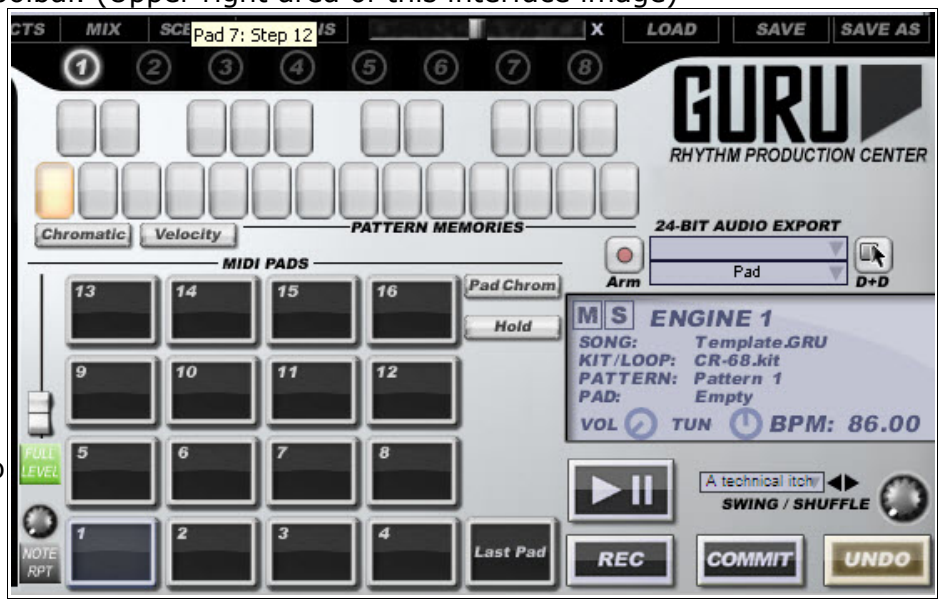
Loading and Saving in GURU

Load/Save with Riff

When using GURU as a plugin, its settings will be saved with the host project file. This involves saving all Engine, Pattern and Pad settings, with references to the samples used.

Load/Save a Bundle file

GURU can save the entire contents of the Engine to a GURU Bundle (.**GRU** files) with the use of the Save button on the toolbar. (Upper right area of this interface image)



This is effectively like saving your host project, except all samples are saved inside the file. These Bundles are recalled by using the Load button on the toolbar.

This makes it easy to share GURU setups and songs.

Also, you can use Menu>File>Save Set As.. to just save the current array in Riff.

If this is a very complex array, it would be a good idea to save it both ways, just to be safe.

Load/Save Kits

The Browser allows you to save Kits (.KIT files) – the entire content of an Engine, minus the Patterns:

- the Pads (including their Pad Edit settings, effects and Aux sends)
- the Engine's Aux FX
- the Engine insert effect as deployed in the Mix view

Please refer to the Guru manual for more details.

Load/Save Pattern/Pattern Set

The Browser also allows you to save the current Pattern (a .**G01** file), or a group of all the current Engine's Patterns into a Pattern Set (a .**G24** file). See the Guru manual for more details.

Creating Beats with GURU: The Basics

Recording Patterns

GURU offers a very intuitive means of recording Patterns using live input. You can record into GURU with the following methods:

- Clicking the on-screen Pads with the mouse.
- Playing an external MIDI controller (for example, a keyboard or set of drumPads).

Record-arming

After loading an Engine with sounds, select the Pattern onto which you wish to Record. Then, click the [Record] button on the Sequencer Master section of the GURU interface. The display will inform you that GURU is 'armed' for Recording.



The display also shows two options:

Click on Record
If this is enabled, GURU will play a metronome click while Recording is in progress.

Quantized Record
If this option is enabled, GURU will quantize all input to the nearest step. If the option is disabled, GURU will preserve the timing of your playing, using Shift graph values.

Setting a Tempo
The best way to set a tempo or BPM for GURU is to use the BPM function of Riff. Use one of these options to set a desired BPM. This will ensure that the tempo set will have all instruments of a Riff Song to be "locked" together.

1. Use the [Tempo] button on the DJ Panel. This is known as "Tap Tempo".
2. Go to the [Signal Chains] tab of Riff, and press the [BPM] button. This is located towards the top right of the [Signal Chains] tab. Once you press this, you can type in the desired BPM and press [Enter].

Record mode

You can now do one of three things:



1. Press the [Play] button on the DJ panel of Riff – this is to be used if you want to Record the Pattern while hearing it in the context of the rest of your Riff Song.
2. Press the [Play] button on the GURU interface – this is to be used if you want to Record the Pattern while ONLY playing GURU.
3. Click the [Record] button again in order to exit Record-armed mode, if you decide you do not want to continue with Recording.

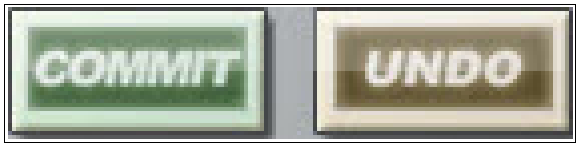
Once you press play (either in Riff or on GURU) after Record-arming, GURU will go into Record mode. You can now play your beats in live! If you're currently in the Pattern view, you'll notice that the notes you play appear on the relevant Pad lanes as soon as you enter them. GURU will keep cycling through the Pattern, so you can keep playing entering notes.

When you want to stop Recording, you can do one of the following:

- Press the [Play] button on the DJ panel of Riff to stop Recording and return to Record-armed mode.
- Press the [Record] button on the GURU interface in order to stop Recording but continue playback. You can enter Record mode again at any time during normal playback by hitting the [Record] button.

Now try switching to pattern two of "Engine 1" and repeat the pattern record steps. You could also switch to "Engine 2" and record more patterns using the same steps as above.

Commit/Undo



GURU offers the Commit/Undo buttons if you want to carry on jamming, without leaving Record mode. After playing in a part while in Record mode:

- Click the [Commit] button to make the take permanent. GURU will not leave Record mode, and you can carry on jamming on top of the last take.
- Click the [Undo] button in order to revert the Pattern back to its state when you last hit Commit (or, if you haven't pressed [Commit] yet, when you entered Record mode).

Please note that the the [Undo] button is **only** active during Recording and not during normal operation.

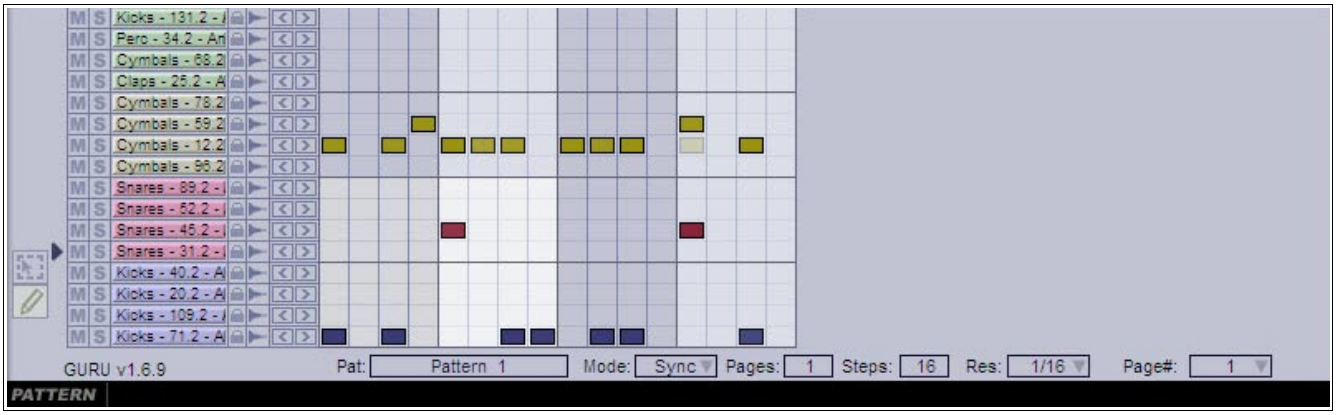
Patterns and Graphs: GURU's step-sequencing system

Patterns and Graphs form the step-sequencing aspect of GURU. While GURU is perfectly capable of accepting MIDI input from a host sequencer (in other words, acting as a sampler instrument with Pads triggered by MIDI input from the sequencer), the Pattern/Graph step-sequencing system offers new and exciting ways of manipulating sounds, as well as providing an easy way to creatively experiment with rhythms.

Understanding GURU's step-sequencing system requires a good knowledge of working with **Patterns**, **Graphs** and the **Sequencer Master** section. This chapter provides a brief overview of each of these.

Patterns

Each of the 8 Engines in GURU is endowed with 24 Patterns. Each Pattern contains a lane, divided into steps, for each Pad, on which to enter notes. A Pattern has 1 page of 32 steps by default, which can be reduced down to 1 step if you wish. It is possible to have 4 pages each with up to 32 steps – in other words, the GURU sequencer system has up to 128 steps.



It is important to remember that in Engine 1, and by default in Engines 2–8, 16 steps represents 1 bar – in other words, a step is a 16th note in duration.

However, Engines 2-8 have a tempo multiplier setting, located in the Sequencer Master display, which allows flexible tempo manipulation of the Patterns in each Engine.

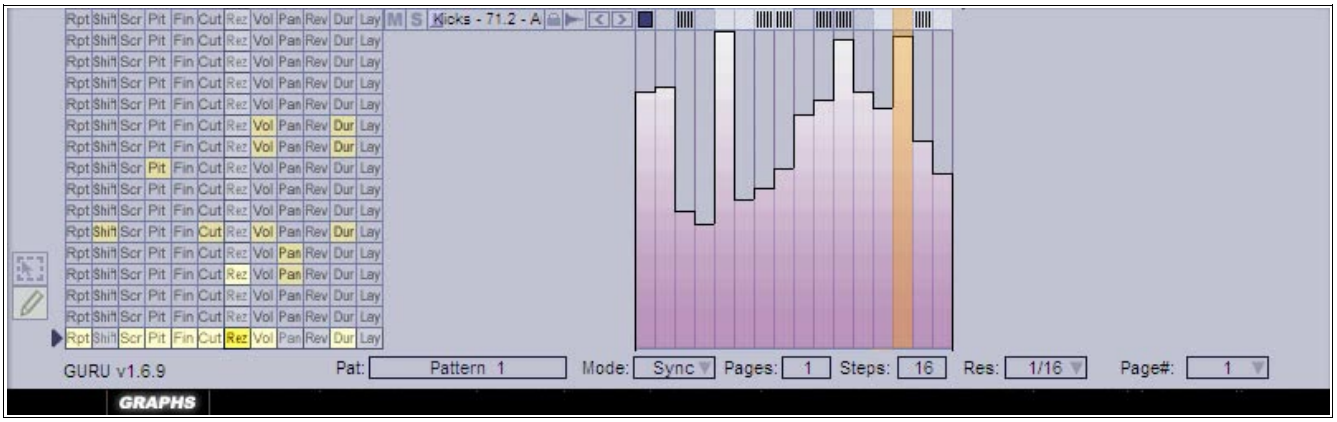
You can enter notes by clicking steps in each Pad lane on the Pattern view using the mouse, or use GURU's realtime recording features.



The 24 Patterns are represented by the Pattern keys, which are assigned to MIDI notes C3 to B4. When you click a Pattern key, or play its corresponding MIDI note, that Pattern will be selected for editing in the Pattern view.

Graphs

Each Pad lane in each Pattern has a set of Graphs associated with it. A Graph is a step-automation system for certain sound altering parameters, allowing parameter automation in parallel to the Pattern note-sequencing system: each step in a Graph corresponds to a step in a Pattern. When a Pattern is played, its associated Graphs always play back along with it.



There are Graphs for velocity, pan, coarse and fine tuning, filter cutoff and filter resonance. There are also graphs for Repeat (the number of times a Pad is triggered within 1 sequencer step, spaced apart equally), Shift (shifts play position of a Pad forwards or backwards between adjacent steps) and Scrub (moves the sample-start point between the start and end of the samples on the Pad). *The following page lists all available Graphs.*

Graphs are examined in detail later in chapter 6 of the main Guru manual. However, it is useful at this point to note that the Velocity and Shift Graphs are very important ones to consider, as they have a crucial part to play in the feel of your sequences. The Velocity Graph is a graphical representation of the velocity of the notes in a Pattern (i.e. the loudness of the notes), while the Shift Graph, represents timing deviations, smaller than a step, from hard step-divisions. Careful use of these Graphs can inject a humanized 'swing' effect into your Patterns. Velocity-based 'swing' can give the illusion of timing deviations when there aren't any.

Graph Types

Graphs are graphical step-automation lanes which control sound-altering parameters of Pads, synchronized to the Patterns in an Engine. The following list shows the available Graphs.

- Repeat
  - Repeats a note a variable amount of times within one sequencer step.
- Shift
  - Shifts play position of a note forward or backwards between neighboring steps.
- Scrub
  - Increases the start point offset for all samples on the Pad.
- Pitch
  - Coarse Pitch
- Fin
  - Fine Pitch
- Cut
  - Filter Cutoff
- Rez
  - Filter Resonance
- Vol
  - Velocity
- Pan
  - Pan Control
- Cut
  - Filter Cutoff
- Rev
  - The 'Reverse' graph automates sample reversing. It has four values:- 'Normal', meaning play the sample as specified in the pad editor, 'Reverse', meaning always play it backwards, 'Forward' (self explanatory), and 'Inverse', meaning do the opposite of whatever the setting in the pad editor is.
- Duration
  - Duration sets the length of any sample in musical units, but only affects samples whose 'Gate' option is turned on in the Pad Editor. NB:- to set very short durations, or to affect samples that don't have 'Gate' turned on, use negative values in the 'Scrub' graph. Holding down ALT or ALT+SHIFT when painting in the graph editor will apply the current edit to multiple tracks at once.

- Force Layer
  - The 'Force Layer' graph forces the note to play a specific layer from the pad it's in. This can be very useful when playing back loops with multiple slices loaded to a single pad. 'Force Layer' overrides the layer playback mode control in the pad editor.

Graphs are very closely linked to Patterns – each of the 24 Patterns in each Engine has individual Graphs. All Pad lanes in each Pattern can have individual Velocity, Pan, Coarse Pitch, Fine Pitch, Filter Cutoff, Duration, Force Layer, Reverse, Filter Resonance, Repeat, Shift and Scrub Graphs.

Appendix A Pro Audio Primer

The following glossary will help you to understand some of the more common terms found in the digital audio workstation world. Also, be sure to check out some of the following online resources:

- Open Labs User Forums – http://forum.openlabs.com
- Modern Recording Techniques – http://www.modrec.com
- Wikipedia – http://en.wikipedia.org/wiki/Professional_audio
- Wikiaudio – http://www.wikiaudio.org
- Audio Engineering Society – http://www.aes.org
- Recording.org – http://recording.org/index.php

Open Labs Pro Audio Primer

ASIO

(Audio Stream Input/Output), developed by Steinberg, is a cross-platform, multi-channel audio transfer protocol that is being adopted by many of the manufacturers of audio/MIDI sequencing applications. It allows software to have access to the multi-channel capabilities of a wide range of powerful sound cards. ASIO expands on the basic capabilities of a standard computer sound card, most of which can only provide stereo (two-channel) audio input and output. The ASIO specification defines the interface that manufacturers of professional audio sound cards must use to create an ASIO driver for their hardware. This driver allows the host audio/MIDI application to "see" all of the inputs and outputs available on the sound card. The user can then assign these I/O ports as needed for recording or playback when using an ASIO-compatible software program. This allows the users to record more tracks simultaneously than the previous limitation of two channels imposed by a standard sound card.

ATTACK
The initial transient or first part of the envelope of a signal. The beginning of a note. Also, see *Release.*

AUDIO
Of, pertaining to, or employed in the transmission, reception, or reproduction of sound.

AUDIO EFFECT
A special type of plug-in that accepts an audio stream and produces a new audio stream. Examples include compressors, distortion and reverb.

AUDIO EFFECT CHAIN

A collection of plug-ins that start with an audio input, then goes through a chain of optional audio effects before going out to an audio bus.

BALANCED LINE
A cable having two conductors and a ground connection and often surrounded by a shield. These lines are often used in professional settings to reduce or eliminate induced noise and interference from external electromagnetic sources.

BANK
A collection of Presets that are loaded into memory for easy access and low load time.

BITRATE
In digital multimedia, bit rate represents the amount of information, or detail, that is stored per unit of time of a recording. The bit rate depends on several factors:

1. The samples may use different numbers of bits.
2. The original material may be sampled at different frequencies.
3. The data may be encoded by different schemes.
4. The information may be digitally compressed by different algorithms or to different degrees.

Generally, choices are made about the above factors in order to achieve the desired trade-off between minimizing the bit rate and maximizing the quality of the material when it is played.

If lossy data compression is used on audio or visual data, differences from the original signal will be introduced; if the compression is substantial, or lossy data is decompressed and recompressed, this may become noticeable in the form of compression artifacts. Whether these affect the perceived quality, and if so how much, depends on the compression scheme, encoder power, the characteristics of the input data, the listener's perceptions, the listener's familiarity with artifacts, and the listening or viewing environment.
Experts and audiophiles may detect artifacts in many cases in which the average listener would not. Some musicians enjoy the distinct artifacts of low bit rate (sub-FM quality) encoding and there is a growing scene of net labels distributing stylized low bit music.

The bit rates in this section are approximately the minimum that the average listener in a typical listening or viewing environment, when using the best available compression, would perceive as not significantly worse than the reference standard:

- Audio (MP3)
    - 4 - kbit/s - minimum necessary for recognizable speech (using special-purpose speech codecs)
    - 8 - kbit/s - telephone quality
    - 32 - kbit/s - MW (AM) quality
    - 96 - kbit/s - FM quality
    - 128 - kbit/s - Typical "acceptable" music quality
    - 256 - 320 kbit/s - Near audio CD quality
- Video (MPEG2)
    - 16 kbit/s - videophone quality (minimum necessary for a consumer-acceptable "talking head" picture)
    - 128 - 384 kbit/s - business-oriented videoconferencing system quality

- 1 Mbit/s - VHS quality
- 5 Mbit/s - DVD quality
- 15 Mbit/s - HDTV quality

CARDIOID MICROPHONE
A common mic pickup pattern designed to attenuate signals arriving 180 degrees off-axis, while fully picking up those sounds that arrive at the front (on-axis).

COMPONENT
A collection of windows controls. An easy way to group controls that work together to provide service to the user.

CONDENSOR MICROPHONE
A microphone that operates on an electrostatic principle rather than on the electromagnetic principle used in dynamic and ribbon mics. These microphones require phantom power, or a +48 volt charge.

CONTROL
A single GUI item that performs a task. Examples include list boxes, right click menus and ok buttons.

DC OFFSET
A DC Offset is an offset in the baseline, or zero mark of the waveform. A sample wave not centered on the zero baseline in the Waveform Display is said to have a DC Offset. This is usually caused by a calibration problem in the audio hardware. It is desirable to remove this offset after recording because undesirable pops can occur when editing a file with a large DC offset. To remove DC offset, a number of options are available ranging from applying a Low-Pass Filter to the waveform to using correction features built into most Audio Editors such as Wavelab or Audition. Dedicated DC Offset plug-ins in several formats such as VST and Direct X are also available.

DECIBEL (dB)
A unit of audio measurement of sound-pressure level (SPL), signal level, and changes or differences in signal level. The decibel is a logarithmic (log) mathematical function that reduces large numeric values into smaller, more manageable numbers. Decibel is calculated as being 10 times the log of the ratio of two powers and 20 times the log of the ratio of two voltages.

DESTRUCTIVE EDITING
When the audio data recorded on a hard disk is altered and rewritten to disk in such a way that it can't be recovered in its original form**.**

DIALOG
A window that is not full screen. In this host all Dialog boxes will be modal (meaning they will be the foremost window and nothing else can be done until they are closed).

DYNAMIC MICROPHONE
A microphone that operates by electromagnetic induction to generate an output signal. When an electrically conductive coil of wire or ribbon is made to cut across the flux lines of a

magnetic field, a current of specific magnitude and direction is generated within that coil or ribbon.

EFFECTS SEND
An auxiliary send feeding an effects device.

EQUALIZER
A frequency-dependent amplifier that enables a recording or mix engineer to control the relative amplitude of various frequencies in the audible bandwidth. Put another way, the equalizer lets you exercise tonal control over the harmonic content or timbre of a recorded sound.

EXPANDER
A device that increases the dynamic range of a signal.

FADER
A linear attenuation device or linear volume control.

FILE TYPES

- ***WAVE*** - **WAV (or WAVE)**, short for Waveform audio format, is a Microsoft and IBM audio file format standard for storing audio on PCs. It is a variant of the RIFF bit stream format method for storing data in "chunks", and thus also close to the IFF and the AIFF format used on Macintosh computers. Both WAVs and AIFFs are compatible with Windows and Macintosh operating systems. It takes into account some differences of the Intel CPU such as little-endian byte order. The RIFF format acts as a "wrapper" for various audio compression codecs. It is the main format used on Windows systems for raw audio.
- ***MIDI*** - ***Musical Instrument Digital Interface***, or ***MIDI***, is an industry-standard electronic communications protocol that defines each musical note in an electronic musical instrument such as a synthesizer, precisely and concisely, allowing electronic musical instruments and computers to exchange data, or "talk", with each other. MIDI does not transmit audio - it simply transmits digital information about a music performance.
- ***MP3*** - **MPEG-1 Audio Layer 3**, more commonly referred to as **MP3**, is a popular digital audio encoding and lossy compression format, designed to greatly reduce the amount of data required to represent audio, yet still sound like a faithful reproduction of the original uncompressed audio to most listeners. It was invented by a team of European engineers who worked in the framework of the EUREKA 147 DAB digital radio research program and finally standardized by ISO/IEC in 1991
- ***OGG -*** **Ogg** is a patent-free, fully open multimedia bit stream container format designed for efficient streaming and file compression (storage).The name "Ogg" refers to the file format which includes a number of separate independent open source codecs for audio, video and text (e.g. subtitles). Files ending in the .ogg extension may be of any Ogg media file type, and because the format is free, Ogg's various codecs have been incorporated into a number of different free and commercial media players.

FREQUENCY
The rate at which an acoustic generator, electrical signal, or vibrating mass repeats a cycle of

positive+ and negative- going amplitude. The number of cycles that occurs over the period of one second is measured in hertz (Hz). Often, the perceived range of human hearing is from 20 Hz to 18,000 Hz.

GAIN
Amount of amplification in dB.

GROUND LOOP
The rate at which an acoustic generator, electrical signal, or vibrating mass repeats a cycle of positive+ and negative- going amplitude. The number of cycles that occurs over the period of one second is measured in hertz (Hz). Often, the perceived range of human hearing is from 20 Hz to 18,000 Hz.

GUI
A graphical user interface (or GUI, often pronounced "gooey") is a method of interacting with a computer through a metaphor of direct manipulation of graphical images and Virtual Live Controls in addition to text. GUIs display visual elements such as icons, windows and other gadgets. The precursor to GUIs was invented by researchers at the Stanford Research Institute (led by Doug Engelbart) with the development and use of text-based hyper links manipulated with a mouse for the On-Line System. The concept of hyper links was further refined and extended to graphics by researchers at Xerox PARC, who went beyond text-based hyper links and used GUIs as the primary interface for the Xerox Alto computer. Most modern general-purpose GUIs are derived from this system. For this reason some people call this class of interface a PARC User Interface (PUI) (note that PUI is also an acronym for perceptual user interface). The PUI consists of graphical Virtual Live Controls (often provided by Virtual Live Control toolkit libraries) such as windows, menus, radio buttons, check boxes and icons, and employs a pointing device (such as a mouse, trackball or touchscreen) in addition to a keyboard. Those aspects of PUIs can be emphasized by using the alternative acronym WIMP, which stands for Windows, Icons, Menus and Pointing device.

The GUI familiar to most of us today is either the Windows or the Macintosh operating systems and their applications originated at the Xerox Palo Alto Research Laboratory in the late 1970s. Apple used it in their first Macintosh computers. Later, Microsoft built on many of Apple's ideas in their first version of the Windows operating system for IBM-compatible PCs.

HARD DISK RECORDER
A system that uses a computer hard disk to record, edit, and reproduce digital data.

INSTRUMENT
A collection of plug-ins that starts with a MIDI input, then goes through optional MIDI effects, into a soft synth, and then into optional audio effects before going out to an audio bus. An instrument is set up anytime a user wants to play a soft synth.

LATENCY
Latency is the amount of time an application allocates to prepare a buffer full of audio data for playback. Lower latency settings add processing time because of the need to refill the smaller data buffers more often. You may need to increase your applications latency under the following conditions:

- You use lots of real-time effects, and you hear dropouts. Check the CPU meter for high readings; try increasing the latency.

- Your sound card does not function well at lower latency. Some sound cards just do not function well at lower latency settings.
- Even if your application reports no problems, if you hear dropouts try increasing the mixing latency.

LIMITER
A device used to keep signal peaks from exceeding a certain level in order to prevent the clipping or distortion of amplifier signals, recorded signals on tape or disc, broadcast transmission signals, and so on.

LINE LEVEL
A signal level that is referenced to either 4 dBm (pro) or -10 dBV (semi-pro/consumer). Devices other than mics, speakers, and power-amplifier outputs operate at these levels.

MASTERING
The processing and transferring of a final, sequenced audio tape to a medium for duplication.

MFUSION
Open Labs mFusion software unifies multiple MIDI interfaces, MIDI keyboards, and MIDI controllers into a single MIDI control panel for assigning MIDI channels, providing keyboard splits, assigning MIDI controllers, and setting other parameters for incoming MIDI data. In mFusion this is all called mapping. Keyboards and other controls may be mapped from one type of MIDI data to another, or mapped to other functions such as keystroke shortcuts, application launching, or even changing the mapping of another MIDI controller. All of the MIDI data mapped by mFusion is unified into a "virtual" MIDI port so that any music application may receive data from all attached MIDI controllers through one single MIDI port. The individual MIDI ports from each device remain available, however, for maximum flexibility.

MIDI
Musical Instrument Digital Interface, or MIDI, is an industry-standard electronic communications protocol that defines each musical note in an electronic musical instrument such as a synthesizer, precisely and concisely, allowing electronic musical instruments and computers to exchange data, or "talk", with each other. MIDI does not transmit audio - it simply transmits digital information about a music performance.

MIDI CC
Short for "MIDI Continuous Controller", a specific kind of MIDI message. The modulation wheel of your synth, for example, sends out "MIDI Continuous Controller 1", or CC#1. Likewise, Volume is CC#7, GLIDE - Portamento Time is CC#5.

MIDI CHANNEL
A discrete portion of the complete MIDI signal that can include as many as 16 channels. Each channel carries independent messages; individual instruments tune in to these, just as a television tunes in to one of many channels. Instruments that can respond to multiple channels at once are called multi-timbral.

MIDI EFFECT
A special type of plug-in that accepts an MIDI stream and produces a new MIDI stream. Examples include arpeggiators, note repeat, chorders and MIDI echo.

MIDI HOST
A MIDI Host is an application that allows you to use virtual effects and instruments (plug-ins). They can be basic programs used to audition plug-in effects and instruments right up to a complex multitrack recording environment for audio and MIDI.

MIDI SEQUENCING
In the field of electronic music, a sequencer was originally any device that recorded and played back a sequence of control information for an electronic musical instrument. Nowadays, the term almost always refers to the feature of recording software which allows the user to record, play back and edit MIDI data. This is distinct from the software features which record audio data. Early analog music sequencers used control voltage/trigger interface, but were replaced by digital hardware- or software-based MIDI sequencers, which play back MIDI events and MIDI control information at a specified number of beats per minute.

MONOPHONIC
Of or noting a system of sound recording, reproduction, or musical instrument using only a single channel.

Multi-timbral
The capability of an electronic musical instrument to respond to and output multiple voice patches at one time.

MULTITRACK RECORDING
Multitrack recording ('multitracking' or just 'tracking' for short) is a method of sound recording that allows for the separate recording of multiple sound sources to create a cohesive whole. This is the most common method of recording popular music.
Multitracking can be achieved with hard disk based systems like an Open Labs production station, often employing a computer and multitrack audio recording software. Multitrack recording devices vary in their specifications, such as the number of simultaneous tracks available for recording at any one time; in the case of tape based systems this is limited by, among other factors, the physical size of the tape employed. For computer based systems the trend is towards unlimited numbers of record/playback tracks, although issues such as memory and CPU available will in fact limit this from machine to machine. It has to be noted that on computer based systems, the number of simultaneously available recording tracks is limited by the sound card discrete analogue or digital inputs.
When recording, audio engineers can select which track (or tracks) on the device will be used for each instrument.

At any given point on the tape, any of the tracks on the recording device can be record or playing back, so that an artist is able to record onto track 2 and, simultaneously, listen to track 1, allowing him to sing or to play an accompaniment to the performance already recorded on track 1. He might then record on track 3 while listening to track 2. All three performances can then be played back in perfect synchrony, as if they had originally been played and recorded together. This can be repeated until all of the available tracks have been used, or in fact, reused.
When recording is completed, the many tracks are "mixed down" through a mixing console to a two-track stereo recorder in a format which can then be duplicated and distributed. Most of the records, CDs and cassettes commercially available in a music store are recordings that were originally recorded on multiple tracks, and then mixed down to stereo. These stereo

mixes can in turn be recorded onto two tracks of a four-track recorder, allowing additional sound to be layered on the remaining tracks.

NOISE GATE
A device that acts as an infinite expander, allowing a signal above the selected threshold to be passed through to the output at unity gain and without dynamic processing. When the input signal falls below this threshold level, the device effectively shuts down the signal by applying full attenuation to the output.

NON-DESTRUCTIVE EDITING
Editing a hard-disk soundfile by moving pointers, without altering in any way the digital audio data originally recorded to disk.

NORMALIZING
A specialized gain-related process that makes the best use of a digital system's dynamic range by automatically determining the amount of gain required to increase the level of the highest amplitude signal to its full-scale amplitude value, and then increasing the level of the selected region or entire file by this gain ratio.

OCTAVE
The most basic musical interval, and the second harmonic of the natural scale, which represents a doubling of frequency.
The diatonic scales in the western harmonic system have 8 notes to the octave, hence the name. There are 12 semi-tones to an octave and in some middle-eastern scales, 24 quarter-tones.

OMNI-DIRECTIONAL MICROPHONE
A mic that outputs signals received from all incident angles at the same (or nearly equal) level.

OSCILLATOR
In modern musical terms, an oscillator is a component that originates a signal. The period of an oscillator is the time it takes to oscillate, or repeat. The period is also referred to as frequency or pitch. The classic analog synthesizers had regular periodic oscillator shapes such as Sine, Triangle, Pulse, Ramp, and Saw. They also sometimes had a special non-periodic oscillator called noise. Although not technically an oscillator because it does not repeat a pattern, the noise oscillator generates semi-random values within a certain frequency.

PHANTOM POWER
Power for a condenser mic that comes directly from the console through balanced mic cables by supplying a positive DC supply voltage of 48V (usually) to both conductors (pins 2 & 3) with respect to pin 1. This voltage is distributed through identical value resistors so that no differential exists between the two leads; therefore, the voltage is electrically invisible to the alternating audio signal. The DC circuit is completed by connecting the negative side of the supply to the cable's grounding shield.

PLUG-IN
Plug-ins are audio processing modules. They are usually of the VST or DX format. They are usually third party external DLLs that will usually take an input stream and produce output streams. In the case of music software this generally takes the form of an instrument, such as a synth or sampler, or an effect processor, such as a reverb or compressor.

POLAR PATTERN
A polar graph of the sensitivity of a microphone at all angles of sound incidence relative to the sensitivity on-axis.

POLYPHONIC
The capability of an electronic musical instrument to output multiple notes at one time.

PRESET
A collection of Instruments and/or Audio Effect chains with unique settings for each plugin in the preset.

PRESET GROUP
User defined group of Presets contained within a Bank.

PUNCH-IN PUNCH-OUT
The entering into and out of record mode on a track that contains existing program material for the purpose of correcting or erasing an unwanted segment.

QUANTIZATION
The amplitude component of the digital sampling process. In an A/D converter, the process of generating a binary number (made of 1s and Os) that represents the voltage of the analog waveform at the instant it is measured or sampled.

RELEASE
The final portion of a note's envelope, which falls from the sustain signal level to silence.

SAMPLE RATE
Level of accuracy with which audio data is stored. The higher the better the sound quality, but the more costly in computer time and memory.
In digital audio, common sampling rates are:

- 8,000 Hz - telephone, adequate for human speech
- 22,050 Hz - radio
- 32,000 Hz - miniDV digital video camcorder
- 44,100 Hz - audio CD, also most commonly used with MPEG-1 audio (VCD, SVCD, MP3)
- 47,250 Hz - world's first commercial PCM sound recorder by Nippon Columbia (Denon)
- 48,000 Hz - digital sound used for digital TV, DVD, DAT, films and professional audio
- 50,000 Hz - first commercial digital audio recorders from the late 70's from 3M and Soundstream
- 50,400 Hz - sampling rate used by the Mitsubishi X-80 digital audio recorder
- 96,000 or 192,400 Hz - DVD-Audio, some LPCM DVD tracks, BD-ROM (Blu-ray Disc) audio tracks, and HD-DVD (High-Definition DVD) audio tracks
- 2.8224 MHz - SACD, 1-bit sigma-delta modulation process known as Direct Stream Digital, co-developed by Sony and Philips

SEQUENCING
MIDI Sequencer - In the field of electronic music, a sequencer was originally any device that recorded and played back a sequence of control information for an electronic musical instrument. Nowadays, the term almost always refers to the feature of recording software

which allows the user to record, play back and edit MIDI data. This is distinct from the software features which record audio data. Early analog music sequencers used control voltage/trigger interface, but were replaced by digital hardware- or software-based MIDI sequencers, which play back MIDI events and MIDI control information at a specified number of beats per minute.

SMPTE TIME CODE/MTC MIDI TIME CODE
Time codes contains binary coded decimal hour:minute:second:frame identification and 32 bits for use by users. There are also drop-frame and color framing flags and three extra 'binary group flag' bits used for defining the use of the user bits. The formats of other forms SMPTE timecodes are derived from that of the longitudinal timecode.

Time code can have any of a number of frame rates: common ones are:

- 24 frame/s (film)
- 25 frame/s (PAL color television)
- 29.97 (30/1.001) frame/s (NTSC color television)
- 30 frame/s (American black-and-white television) (almost obsolete)

In general, SMPTE timecode frame rate information is implicit, known from the rate of arrival of the timecode from the medium, or other metadata encoded in the medium. The interpretation of several bits, including the "color framing" and "drop frame" bits, depends on the underlying data rate. In particular, the drop frame bit is only valid for a nominal frame rate of 30 frame/s: see below for details. SMPTE/MTC is a position and timing reference that indicates the current location in the project and how quickly the project should be playing. Time code labels the position in a project in hours, minutes, seconds, and frames. The speed of playback is indicated by a frame rate. Time code is recorded onto tape using a device called a time code generator. The process of recording a time code signal onto a track is called striping. Normally, the start of a tape stripe has a particular time, expressed in hours, minutes, seconds, and frames. For example, the tape stripe might start at 00:00:00:00, 01:00:00:00, or any other time. The material recorded on the tape usually starts anywhere from 10 seconds to several minutes after the start of the time code. Sometimes, the tape stripe starts at a time like 00:59:50:00, and the material starts 10 seconds later, at 01:00:00:00.

SOFT SYNTH
A soft synth, also known as a software synthesizer or virtual instrument is a computer program for digital audio generation. Computer software which can create sounds or music can accomplish the same tasks as dedicated hardware. Softsynths can be cheaper and more portable than dedicated hardware, and easier to interface with other music software such as MIDI sequencers.

SOLO
A monitor function that lets the engineer hear a single instrument or group of instruments without affecting the studio's headphone monitor mix, recorded tracks, or mixdown signal.

STREAMING
A system for transmitting audio and/or data through a transmission media (such as the web) in real-time.

SUSTAIN
In a traditional envelope, the level at which an enveloped setting remains after the Attack and Decay stages until the key is released.

SYNC
The locking of relative transport or playback speeds of various devices to allow them to work together as a single, integrated system.

TRANSPOSE
To write or perform (a composition) in a key other than the original or given key.

UNBALANCED LINE
A cable having only one conductor plus a surrounding shield, in which the shield is at ground potential. The conductor and the shield carry the signal.

VST/VSTi
Virtual Studio Technology: Its acronym VST refers to an interface standard for connecting audio synthesizer and effect plug-ins to audio editors and hard-disk recording systems. VST and similar technologies allow the replacement of traditional recording studio hardware with software counterparts. A VST instrument (or VSTi) is a type of VST plug-in that is generally used to synthesize sound or play-back sampled audio. Types of VST instruments include (among others) virtual synthesizer devices and sampler devices. VST instruments can be played in real-time when used with an appropriate software and hardware configuration.

VSTi LINK
The connection between a plug-in parameter and a physical hardware MIDI control (or a virtual soft control). An example of a link would be when a user moves a hardware MIDI knob and the volume output of a soft synth changes.

WAVEFORM
A usually graphic representation of the shape of a wave that indicates its characteristics (as frequency and amplitude). When talking about synthesizers, the term generally refers to the most common types of waveforms, such as the sine, triangle, sawtooth, and pulse waves. It can also refer to digital waveforms which are rendered from pre-recorded samples.

WORD CLOCK
A word clock is a device used to create a regular pulse used to synchronize other devices, such as digital audio tape machines and compact disc players, which interconnect via digital audio. S/PDIF, AES/EBU, ADAT and other formats use a word clock. A word clock neither produces nor uses timecode; it is used entirely to keep a perfectly-timed and constant bitrate to avoid data errors.

A p p e n d i x B S o u n d P r e s e t s

VST Instruments / MIDI FX / VST FX

Accordion
Accordion Emulator- Acoustic-Klezmer, Polka, Zydeco, Tejano, World- Beirut, Weird Al

Addictive Drums
Multi-Timbral Drum Sampler- Drums- Rock, Pop- Any

Artphase-VSTi Phase Distortion Synth- Lead, Trance, Spacey, Tangerine Dream, Orbital

BB303i
Classic 303- Bass, Synth- Lead, Bass- House, Techno, Acid- Old Skool Hip-Hop (West Coast), Heaven 17

Blood Bucket
Synth- Lead, Ambient Sounds- IDM, Glitchcore, Illbient- Kid 606, Venetian Snares

Crystal
Subtractive/ FM Synth- Lead, Pads, Ambient Sounds- Trance, Ambient- Brian Eno, Jean-Michaael Jarre

Cubix
Drum/ Bassline Synth- Drums, Synth- Electro, House- Kraftwerk, Depeche Mode

Discovery_v2
Analog Subtractive Synth- Lead, Pads- Techno, Ambient- Erasure, Dust Bros.

EVM Bassline v1-3
Acoustic Bass Synthesizer- Acoustic- Rock, Pop- Any

Acoustic Bass Synthesizer
Acoustic Rock, Pop Any

EVM UltraSonique
Synthesizer/ Sample player- Lead, Pads, Samplers- Electronic, Pop- Air, Van Halen's 1984

HighLife
Sampler- Samplers- Any- Everyone

Lallapallooza_lite
FM Synth- Lead, Pads- Experimental, Industrial- Front 242, Merzbow

MicroSynt
PWM Synth- Lead- Electronic, Any- Basic synth sounds

Mini_ErHu
String Synth- Acoustic, Lead- Scary Movie Music

Minimal
Drum/ Bassline Synth- Drums, Synth- Acid, House- Rebirth

Monolisa
Bass Synth- Lead, Bass- Electronic- generic

Motion2.8
Automated Modulation Synth- Lead, Pads, Ambient Sounds- Dust Bros,, soundtrack music

Mr. Alias
Noise Synth- Ambient Sounds- IDM, Experimental- Alec Empire, Kid 606

MrRay22
Electric Piano Synth- Lead, Acoustic- Pop, R B, Any- everybody

MrRay73
Rhodes-Style Piano Synth- Lead, Acoustic- Pop, R B, Rock, any- Ray Charles, everyone else

MrTramp
Wurlitzer-style Piano Synth- Lead- Pop, R B, Rock- Supertramp, Three Dog Night, Fela Kuit

Nanotron2
Novatron/Mellotron emulator- Lead- Rock, Pop- The Moody Blues, David Bowie

ORGANized_trio_v30
Hammond Organ emulator- Lead- Gospel, Rock, R B- Jimmy Smith, Al Green, MMW

Ph0ne
PM Synth- Lead, Ambient Sounds- Electronic, Experimental- Various DHR Artists

Phadiz(P)
PD Synth- Lead, Pads- Electronic, Ambient- Vangelis, The Orb

Plugsound Free
Multi-Instrument Sound Module- Lead, Misc- All Genres- Any Artist

ProteusX
Multi-Instrument Sound Module- Lead, Misc- All Genres- Any Artist

ProtoPlasm21free
Multi-timbral synth; Lead, Pads- Electronic, Experimental- Orbital, Little Computer People

Purity
Multi-Instrument Sample Player- Lead, Pad, Bass, Drums, Misc- All Genres, Any Artist

RealGuitar2SE
Acoustic Guitar Sample Player- Lead, Acoustic- Rock, Pop- Any

ReZ v.1.3
PM Synth- Lead, Bass- Techno, Industrial- Daft Punk, NIN

Rogue
Synth- Lead- Electronic- Any

StringSynth
ARP/Solina String Synth emulator- Lead, Acoustic, Ambient Sounds- Air, Pink Floyd

Super Spook Keys
Theremin Emulator similar to Spook Keys with more options- Lead, Ambient Sounds, Rock, Electronic, Experimental- Stereolab, Pink Floyd

TickyClav
Clavinet Emulator- Lead- Rock, Pop, Funk- Mates of State, Stevie Wonder, The Commodores

TruePianos
Piano Module- Lead- Rock, Pop, Classical- Alicia Keys, Elton John

String Theory 1.5
String / Hybrid Synth- Lead, Ambient Sounds- Rock, Pop, Electronic, Ambient

STS-26
FM Synth- Lead, Pads, Ambient Sounds- Electronic, Ambient- The Orb, Black Dog Productions

Sylenth1
VA Synth- Lead, Pads, Bass, Ambient Sounds- Electronic, Pop, Ambient- Yello, New Order

Synth1 VST
VA Synth modeled after Nord Lead2- Lead, Bass- Electronic, Pop, Hip-hop- Autechre, RZA, Peter Gabriel

Wusikstation
FM Synth- Lead, Bass, Pads- Electronic, Pop- New Order, J Saul kane

Wusikstation Multi-Out
FM Synth with Multiple Outputs- Lead, Bass, Pads- Electronic, Pop- New Order, J Saul kane

4Front Auxiter
Mastering EQ; Exciter/Refresher- Enhancing Vocals, Track Restoration

4Front Contour Max
Mastering EQ; Frequency Shaper- Use For Final Mastering and Track Restoration

4Front Sand Brush
Mastering EQ; High Frequency Booster- Track Restoration, Vintage Vinyl-type Effects, Good for Vocals, too

4Front YLimiter
Mastering and EQ; Hard Compressor- Use for Drum/Percussion Tracks and Effects

BCheese
Filters; LFO Driven Filter Set- Good For Synths- Use to create sweeps and other effects

Boss DS-1
Distortion; Distortion Stomp Pedal Simulator- Useful for String Instruments

Boss SD-1
Distortion; Super Overdrive Stomp Pedal Emulator- Creates Over-driven Tube Amp effect. Useful for String Instruments

BUZ
Distortion; Distortion Stomp Box Emulator- Useful for String Instruments

Classic Auto-Filter
Filters; Four-pole LFO Modulated Filter- Use to Create Sweeps and Other Strange Effects

Classic Chorus
Filters; Adds Depth To Almost Any Type of Track

Classic Compressor Mastering; Analog-style compressor- adds warmth and punch to Vocal Tracks

Classic Delay
Delays Reverbs; Full Featured, Multi-Purpose Delay

Classic Flanger
Filters; Adds Swirling-type effect- Useful for Guitar Type Sounds

Classic Phaser
Filters; Analog Phase Shift Emulator- Many Uses, Sounds Good on Vocals

Classic Reverb
Delays Reverbs; All-Purpose Reverb

Frohmage_vst2win
Filters; Unique Resonance Filter- Produce EXTREME Effects

JCM900
Amps; Vintage Marshall Tube Amplifier Simulator- Adds Warmth to Guitars and strings

MrDonald
Amps; Panning; Rotary (Leslie) Speaker simulator- Multi-Purpose

OctBUZ
Distortion; Distortion/ Overdrive Module with Octave Adjustment

PS-1
Filters; Simulated Oberheim Phaser Stomp Box

Rednef Twin
Amps; Simulated 1969 Fender Twin Reverb Guitar Amp

Tube Screamer
Distortion; Simulated Overdrive Stompbox

Univibe
Filters; Simulated Modulation Stompbox- Provides Reverb/ Phaser Type Effects

GURU
Drum Machine, MPC, any

1175
Mastering EQ; Fast attack Compressor

50HzKicker
Mastering EQ; Kick drum enhancer

Amp-model-dual
Amps; Duel Amp Modeler

AmplitudeModulator
Modulation; Amplitude modulator

Auto-Wideness v1.0
Dynamics EQ; Widener

Autoexpand
Dynamics EQ; Expander

autopeakfilter
Filter; FFT peak detecting filter

avocado_glitch
Modulation; ducking glitch generator

bandpass
Filters; Band pass filter

mdaBandisto
Distortion; multi-band distortion

mdaCombo
Amps; combo amp

mdaDegrade
bit reducer

mdaDelay
Delay

mdaDubDelay
Delay; delay with LFO settings

mdaLeslie
Amps; Leslie style rotory cabinet

mdaLoudness
Dynamics; level booster

mdaMultiBand
EQ; multi band EQ

mdaOverdrive
Distortion; Overdrive and muffle

mdaRezFilter
Filter; Resonance filter

mdaRingMod
Modulation; ring mod

mdaRoundPan
EQ; Round Pan

mdaDetune
Detune; detune by cents

mdaShepard
Shepards tone; adds an oscillating sine wave

mdaStereo
Dynamics; Stereo width, delay, balance, and mod

mdaSubSynth
Adds sub harmonic frequencies

mdaTestTone
Test tone; sine, white noise, pink noise

mdaThruZero
Modulation; phase modulation

mdaVocoder
Vocoder; talk like a robot

MetalMickey
Delay; Eight step delay effect

bitred
Bit depth reductiion

chorus
Filter; Chorus up to eight voices

chorus_stereo
Filter; eight voicesnwith beat sync

Compciter
Distortion; with highpass filter

delay
Delay; Basic

delay_chorus
Delay; with added chorus

delay_sustain
Delay; Auto sustaining

delay_tempo
Delay; with beat sync

delay_varlen
Dalay, Variable length delay

dirtsqueeze
Distortion; with saturation

distort-fuzz
Distortion; Fuzzy

Exciter
Dynamics; harmonically enhances dull recordings

expander
EQ; Downward expander

fairlychildish
Dynamics, compressor limiter

fft-delay
Delay; Eight band fft delay

fft-filter
FFT bit filter

fft-ps
FFT pitch experimenter

flangebaby
Modulation; Flanger with beat sync

floaty_delay
Delay; Modulating delay

graphdist-dyn
Distortion; Graphic interphase

hpflpf
Filter; High pass, low pass

hugebooty
Dynamics; Bass enhancer

MGA_JSLimiter
Dynamics; Limiter

noisegate
Dynamics; Simple noisegate

octavedown
Octave downer

octaveup
Octave upper

ozzifier
Pitch delay doubler

ppp
EQ; Ping pong pan

rbj1073
EQ; 1970's vintage

reacomp-standalone
EQ; Compressor

readelay-standalone
Delay; multi-tap delay

reaeq-standalone
EQ; Multi band EQ

reafir_standalone
Dynamics; EQ, Gate, Compressor, Convolve, Subtract

reagate-standalone
EQ; Gate

reaxcomp-standalone
EQ; Multi band eq

reverseness
Reverse in segments

soft_clipper
Dynamics; level booster

SP1LimiterJS
Dynamics; Simple peak limiter

spectropaint
Draw the effect

StereoField
EQ; Stereo field manipulator

superpitch
Adjust pitch by percents, semitones, octaves

thunderkick
EQ; Subsynth filter

TransientController
Dynamics; Transient control

Transient-driven Auto-Pan v1.1 (Master)
EQ; Transient driven auto pan - Master

Transient-driven Auto-Pan v1.1 (Slave)
EQ; Transien driver auto pan - Slave

tremolo
Filter; Repetitive variation in amplitude

tuner
Get in tune

waveShapingDstr
Distortion: Wave shaping

moog24db
Moog style filter

spectro_filter_paint
Filter; Draw the filter field

midi_arp
Arpeggiator; plays notes in succession

midi_CC_mapper
Configure midi mapping

midi_chorderizer
Offset up to four voices

midi_chordkey
Chord in key

midi_humanizer
Velocity and timing humanizer

MIDI_KeySnap
Midi note constrainer

midi_modal_randomness
Convert midi into modal randomness

midi_note2channel
Send Midi notes to a channel

midi_note_repeater
Simple midi note repeater

MIDI_Tool II
Midi modification

midi_transpose
Transpose by semitone

MIDI_Variant
Pattern variation

MIDI_Velocifier II
Midi velocity effect

midi_velocitycontrol
Midi velocity control

MIDI_Wobulator
Midi pitch wheel generator

midinoteondelay
Midi note on delay