

# USER'S MANUAL

# ANALOG LAB



## **PROGRAMMING:**

Thomas Diligent  
Robert Bocquier  
Adrien Courdavault

## **SOUND DESIGN:**

Michael Hosker (All)  
Ted James (Jupiter8V)  
Matthew Sevant (ProphetV)  
Knowlton Walsh (MiniV)  
Matt Sterling (Arp 2600V)  
Ted James (CS80V)

## **INDUSTRIALIZATION :**

Nicolas Dubois  
Zhao Yitian (CME)

## **MANUAL:**

**Randy Lee**  
Pierce Warnecke  
Tomoya Fukushi  
Noritaka Ubukata  
Antoine Back

## **DESIGN:**

Shaun Ellwood  
Morgan Perrier

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4, Chemin de Malacher  
38240 Meylan  
FRANCE  
<http://www.arturia.com>

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***April 2013 edition***

## **Thank you for purchasing Arturia's Analog Lab!**

This manual covers the features and operation of Arturia's **Analog Lab**, a software synthesizer that allows you to play and modify over 5,000 sounds.

After the purchase of this software you will receive its serial number and an unlock code by e-mail. This information enables you to register the software online.

Once you have registered your software you will receive an activation code by e-mail that will allow you to authorize the software for use on your computer.

For details regarding the registration and authorization processes, see **Chapter 3**.

### **Special Message Section**

#### **SPECIFICATIONS SUBJECT TO CHANGE:**

The information contained in this manual is believed to be correct at the time of printing. However, Arturia reserves the right to change or modify any of the specifications without notice or obligation to update existing software installations.

#### **IMPORTANT:**

The product used in combination with an amplifier, headphones or speakers, may be able to produce sound levels that could cause permanent hearing loss. DO NOT operate for long periods of time at a high level or at a level that is uncomfortable.

If you encounter any hearing loss or ringing in the ears, you should consult an audiologist.

#### **NOTICE:**

Service charges incurred due to a lack of knowledge relating to how a function or feature works (when the software is operating as designed) are not covered by the manufacturer's warranty, and are therefore the owner's responsibility. Please study this manual carefully and consult your dealer before requesting service.

#### **PRECAUTIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:**

1. Read and understand all the instructions.
2. Arturia is not responsible for any damage or data loss caused by improper operation of the software.

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# 1 INTRODUCTION

## 1.1 History

Early in 2001 Arturia began working on advanced algorithms for the digital emulation of analog circuit audio characteristics. They are known as TAE<sup>®</sup>, standing for True Analog Emulation. In non-technical language, this is an unprecedented way of analyzing and recreating the analog circuits of the original product. Nearly a year after they began work on the algorithms, Arturia was ready for feedback. At the 2002 NAMM show in California, Arturia shared an early version of what would later be the Modular V synthesizer. A recreation of the classic 60's modular synthesizer that set the foundation for all synths to come.

In seeking insight from sound production experts as well as avid synthesizer users, Arturia was able to ensure the quality of the instruments they made.. The launch of this sound powerhouse was an instant success, winning awards from several top magazines, and leading to the development of other synth recreations.

Shortly thereafter, Arturia started receiving many requests from musicians, producers and bands. Many of them explained how they were planning to replace their original hardware synthesizers with virtual instruments. Artists around the globe were beginning to see the advantages of a software alternative to hardware-based synthesizers.

The CS-80V emulated the legendary Yamaha CS-80, considered by many as "the ultimate polyphonic" synthesizer, and was launched at the AES 2003 in New York.

ARP 2600V was launched at the Winter NAMM Show 2005 in Anaheim. This is a faithful reproduction of the ARP 2600 and is great for just about any sound one might wish to create: everything from drum n' bass stabs to Star Wars' R2-D2 sounds have been made with the ARP.

At the Winter NAMM Show 2006, ARTURIA announced the release of its seventh product: the Prophet V. This powerful hybrid gives you two instruments in one: it combines the warmth of the legendary Prophet 5 programmable analog synth with the unique Vector Synthesis textures of the digital Prophet VS.

At the summer 2007 NAMM Show Arturia launched the Jupiter-8V. The Jupiter-8V was capable of creating very versatile sounds: You could easily make 'fat' or 'crystal' sounds with it. In fact, Jupiter-8V sounded the way it looked: 'sleek and polished'.

After Jupiter 8V came Oberheim SEM. Oberheim SEM brought the unique sound of the constantly variable filter and oscillators that the original SEM had. By adding the 8 Voice Programmer, it allowed the user to create one of most rare and expensive poly synths of the 70's, the Oberheim 8 voice. As usual we went beyond the original boundaries of the product and added new sound and modulation capabilities that take the SEM far beyond the original while maintaining the sound characteristics.

In 2012 Arturia launched its first venture into the classic electric piano products with the release of Wurlitzer V. Based on a physical modeling engine, it recreates the sound used on many of the best albums ever. Once again we went a step beyond and allowed the user access to the physical modeling parameters itself so that you could sculpt the sound in ways never before possible.

## 1.2 Here and Now

Analog Lab brings all of these classic instruments together into one software app. It allows the user access to the sounds of all these great instruments that now are out of reach for most to be able to purchase. With its simple but powerful browser and data filtering, it makes finding the right sound quick and easy. The new MULTI page allows you to create your own splits and layers of these powerhouse synths and keyboards with simple drag and drop functionality. The LIVE page then allows you to organize your SOUNDS and MULTIS so that you can recall them quickly via program change messages. Analog Lab is more than just a sound library of the best analog keyboards; it is a powerful sound design tool and live performance instrument that will become an integral part of your everyday workflow.

## 1.3 TAE®

TAE® (True Analog Emulation) is Arturia's outstanding technology dedicated to the digital reproduction of the analog circuits used in vintage synthesizers.

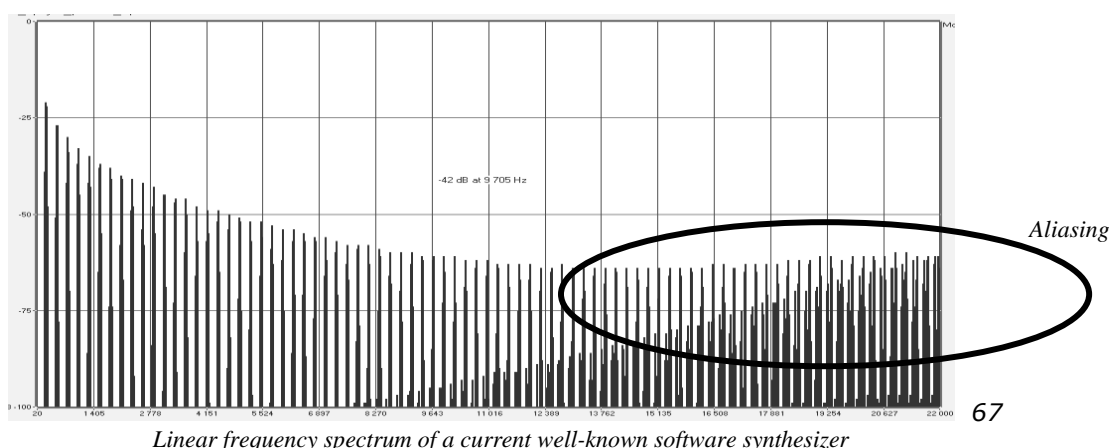
TAE®'s software algorithms result in spot-on emulation of analog hardware. This is why Analog Lab, and all of Arturia's virtual synthesizers, offer an unparalleled quality of sound.

TAE® combines three major advances in the domain of synthesis:

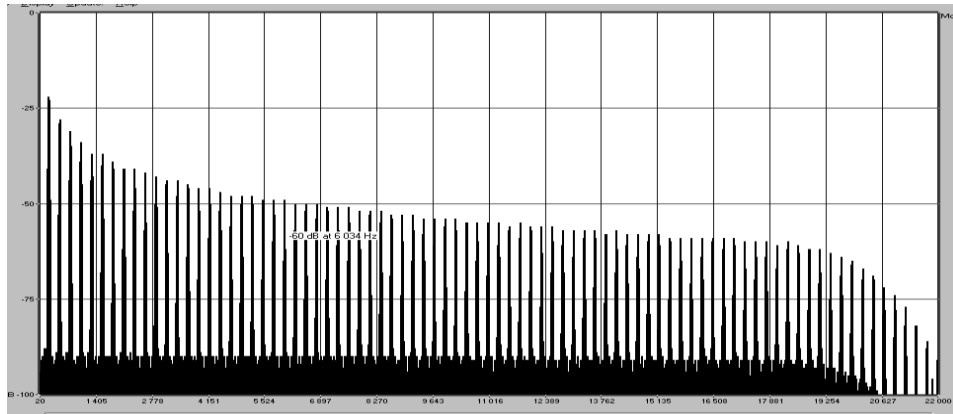
### 1.3.1 Aliasing-free oscillators

Standard digital synthesizers produce aliasing in high frequencies, and also when using Pulse Width Modulation (PWM) or Frequency Modulation (FM).

TAE® enables the generation of oscillators which are completely free of aliasing in all contexts (PWM, FM...), and at no extra CPU cost.





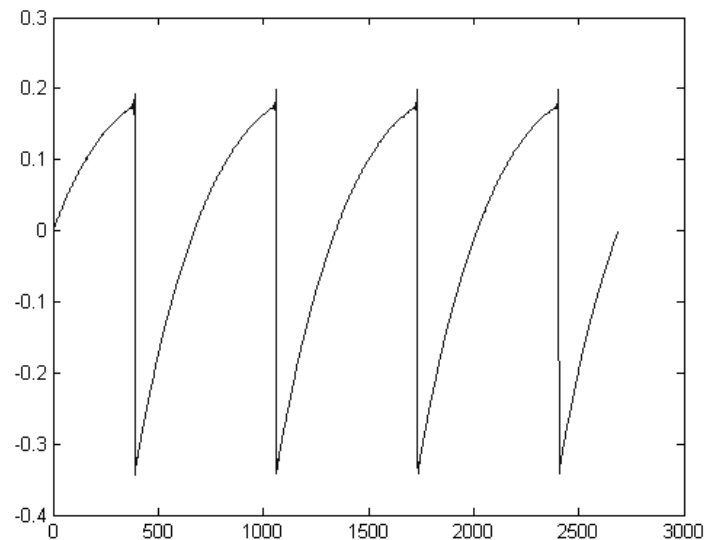


*Linear frequency spectrum of the Analog Lab oscillator made with TAE®*

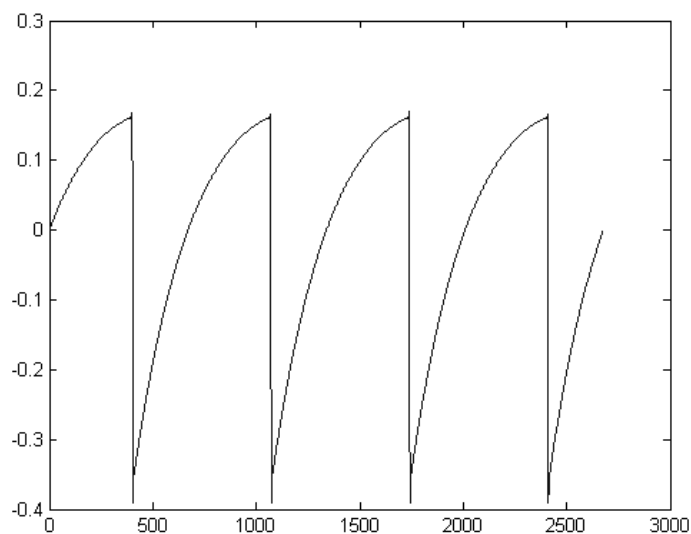
### 1.3.2 A better reproduction of analog oscillator waveforms

The waveforms produced by the oscillators in analog synthesizers are affected by the presence of a capacitor in the circuits. The discharge of a capacitor results in a slight 'bend' in the original waveform (most notably for sawtooth, triangular and square waveforms). TAE® reproduces the result of this capacitor discharge in software.

Below is the analysis of a waveform from one of the 5 original instruments that Arturia's software emulates, followed by one made by Analog Lab. They are both equally deformed by the low-pass and high-pass filtering.



*Temporal representation of the "sawtooth" waveform of a hardware synthesizer*



*Temporal representation of a “sawtooth” waveform reproduced by TAE®*

What’s more, the hardware analog oscillators were unstable. In fact, their waveform varies slightly from one period to another. If we add to this the fact that the starting point for each period (in Trigger mode) can vary with the temperature and other environmental conditions, we see why vintage synthesizers have such a typical sound.

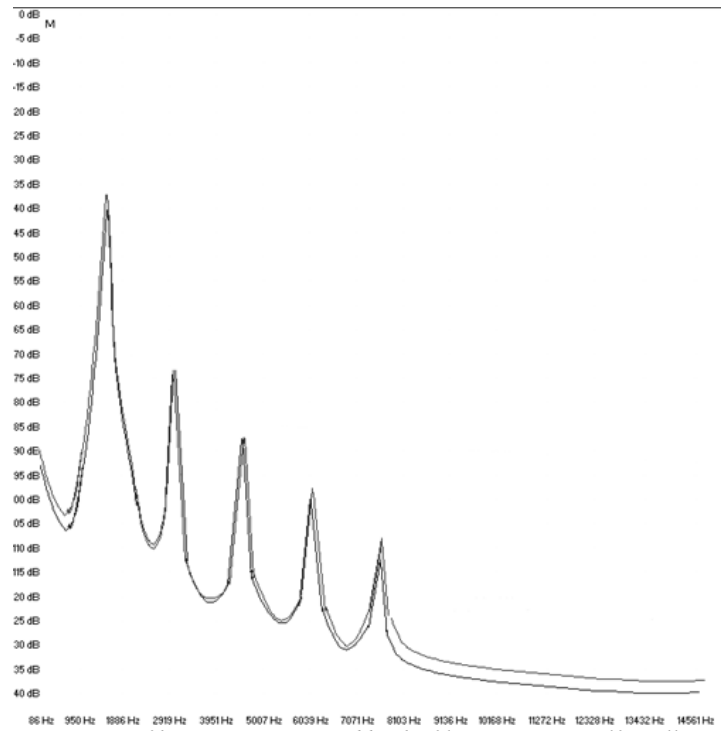
TAE® reproduces the instability of oscillators, resulting in a fatter and “bigger” sound.

### **1.3.3 Direct Filter Circuit Modeling**

Due to advances in computer processing power, Analog Lab can now employ direct filter modeling techniques to achieve unprecedented accuracy in the emulation of a hardware synthesizer’s filter. By modeling the operation of the individual hardware components of the filter circuit, the warm nuances synonymous with analog sounds are recreated.

The following graph shows a single example of direct circuit modeling in action. The peaks represent the generation of harmonics at multiples of the resonant frequency when a particular filter is in self oscillation mode. These harmonics are characteristic of hardware synthesizer filters and are due to the non-linear behavior inherent to their analog circuitry. Anomalies such as these add to the richness and warmth of the sound produced by the filter.

But you’ll notice there are two lines on the graph: Those are the superimposed frequency domain plots for both one of Arturia’s virtual instruments and the hardware filter being emulated. They are practically indistinguishable, both on the graph and to the human ear. The direct recreation of this analog circuitry causes the same characteristics of the sound to be present, thus giving the user a truly analog sound.



*Comparison of harmonics generated by the filter circuits in self oscillation of Analog Lab and a hardware synthesizer*

## 2 INSTALLATION

### 2.1 System requirements

#### 2.1.1 REQUIRED MINIMUM CONFIGURATION:

PC: 2 GB RAM; CPU 2 GHz (Multiple cores required)

Mac: 2 GB RAM; CPU 2 GHz (Multiple cores required)

#### 2.1.2 PLATFORM SPECIFICATIONS:

Windows: XP/VISTA/SEVEN/EIGHT

Mac OS X: 10.6 or higher

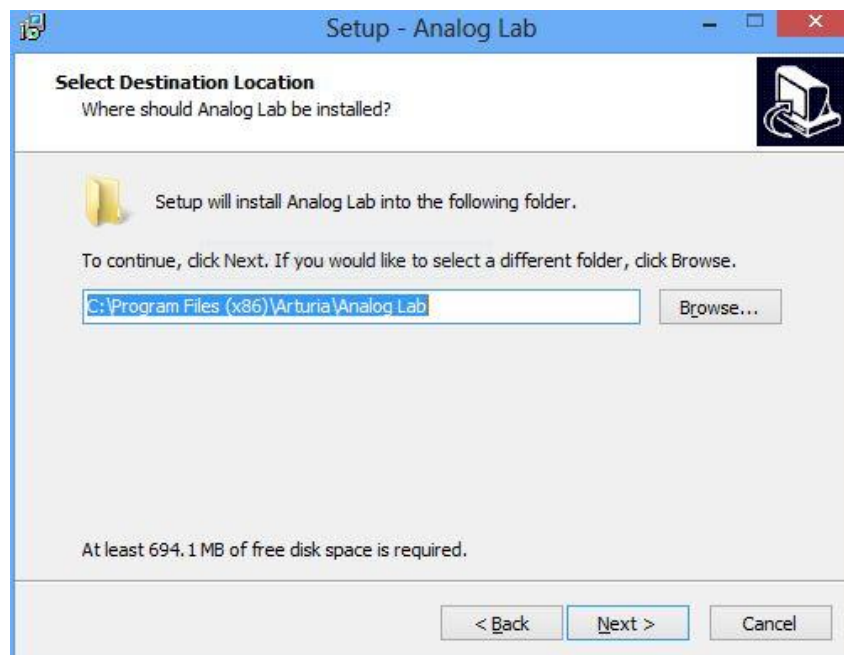
### 2.2 Windows installation (XP/VISTA/7/8)

Download the installer file and double-click on the icon named **Analog\_Lab.exe**.

The first step of the process requires you to read and accept the terms of the License Agreement, after which you will choose the destination folder for the Analog Lab installation. By default, it will be installed in this location:

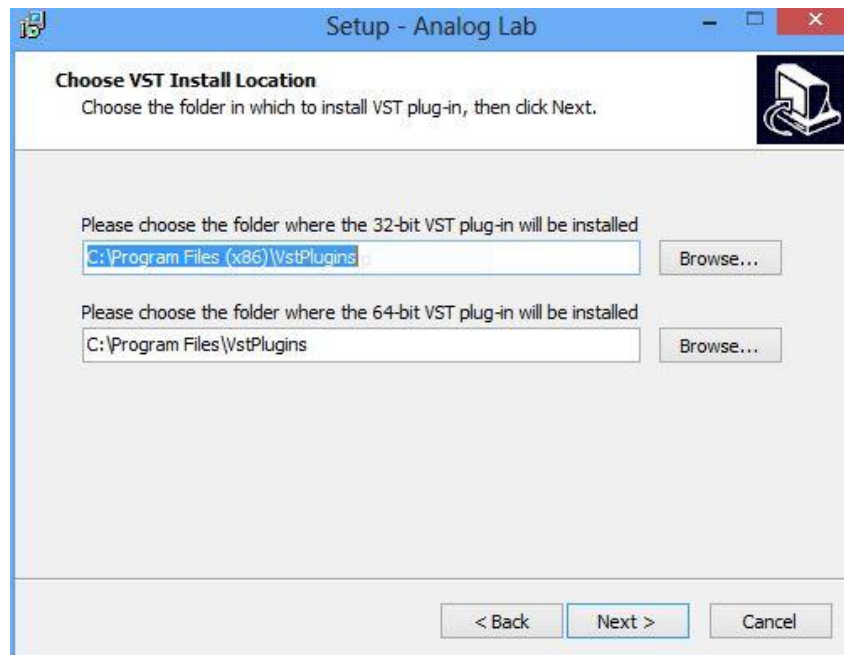
**C:\Program Files (x86)\Arturia\Analog Lab**

You can select a different destination with the Browse button.



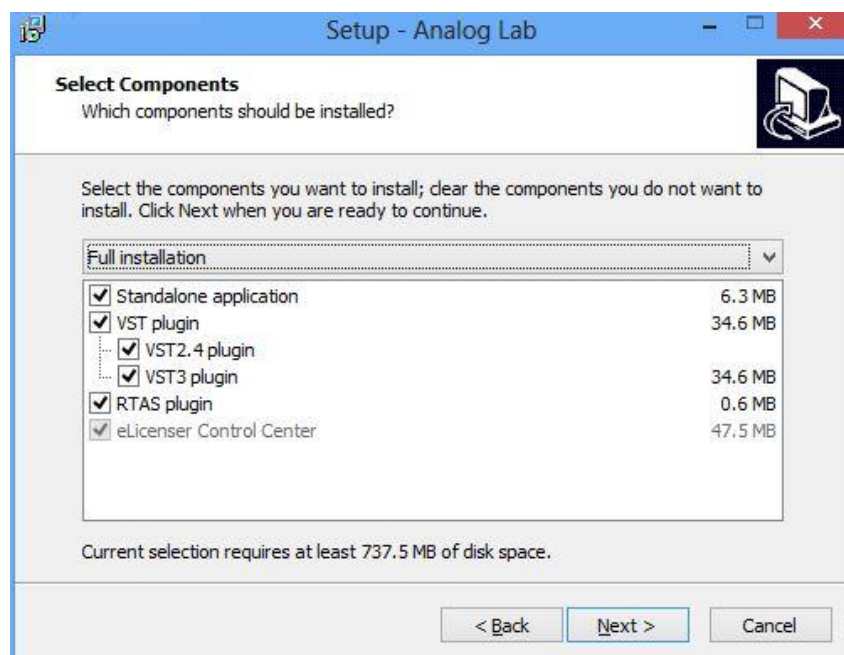
*Choose the installation folder*

On the next screen you will be asked to choose a set of installation folders for the 32-bit and 64-bit versions of the Analog Lab VST plug-in. The default folders are the ones most likely to be used by other plug-ins, but you may define other locations if you like.



*Choose the locations of the VST plug-in installation folders*

Analog Lab is installed as a standalone application by default; the following step lets you choose whether to install it as a plug-in as well. To do so, click the boxes next to the protocol(s) you wish to use (VST2.4, VST3 and/or RTAS). However, to ensure the greatest degree of compatibility we recommend selecting all three installation options.



*Choose the installation components*

The installation program now has enough information to complete the installation. When the installation process is complete, proceed to the authorization step (Chapter 3).

## 2.3 Mac OS X installation

Download the installer file and then double-click on the icon named **Analog\_Lab.dmg**.

Follow these steps:

- Read and accept the End User License Agreement
- Select a destination.

When prompted, enter the administrator name and password of your computer in the Installer window.



*Installer window*


Analog Lab will be installed automatically as a standalone application and also as VST2, VST3, AU and RTAS plug-ins.

When the installation process is complete, proceed to the authorization step (Chapter 3).

## 3 AUTHORIZATION

Now that Analog Lab has been installed you will need to authorize the software.

Analog Lab uses the Soft-eLicenser virtual dongle solution so as to avoid tying up a USB port. This system enables the use of the synthesizer on one computer, which will need to be connected to the Internet during the authorization process.

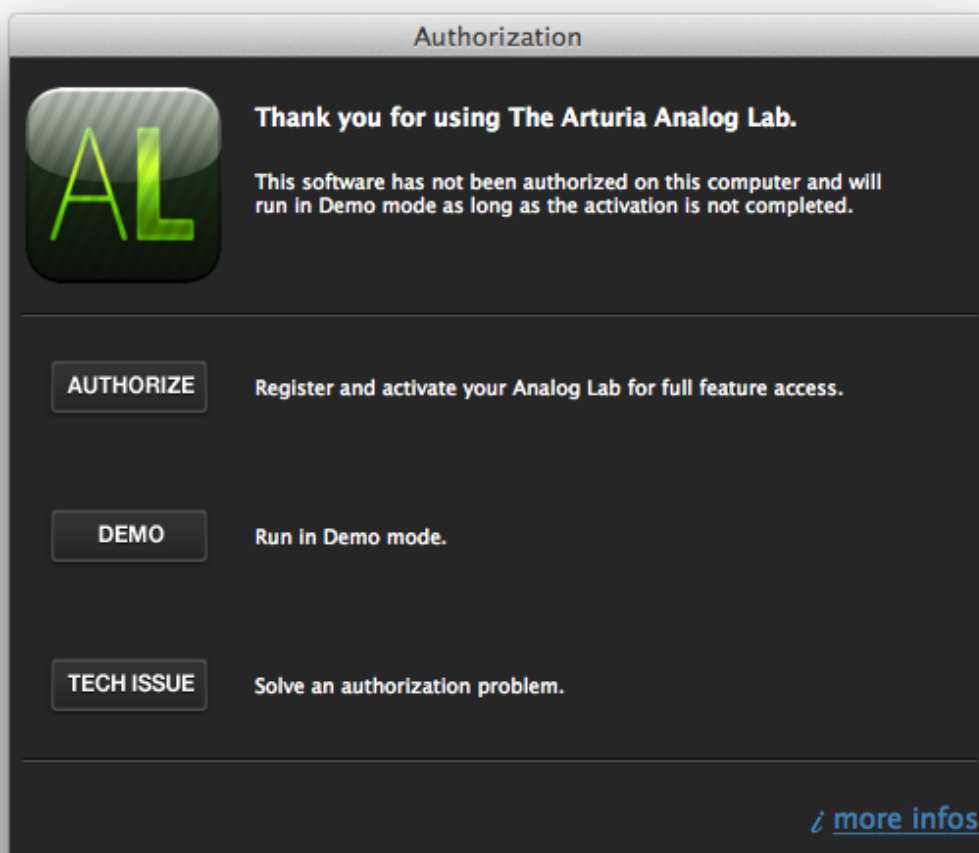
 To transfer your license to another computer, or simply use Analog Lab on several computers (one instance at a time), you will need:

- \* to use one USB-eLicenser hardware dongle (sold separately, also used by many other software editors);
- \* in the eLicenser Control Center, to drag-and-drop your license from Soft-eLicenser to USB-eLicenser. This transfer, requiring a valid internet connection, can be done both ways:
- \* from Soft-eLicenser to USB-eLicenser;
- \* from USB-eLicenser to Soft-eLicenser.

Please check the eLicenser documentation installed on your computer for any further technical details.

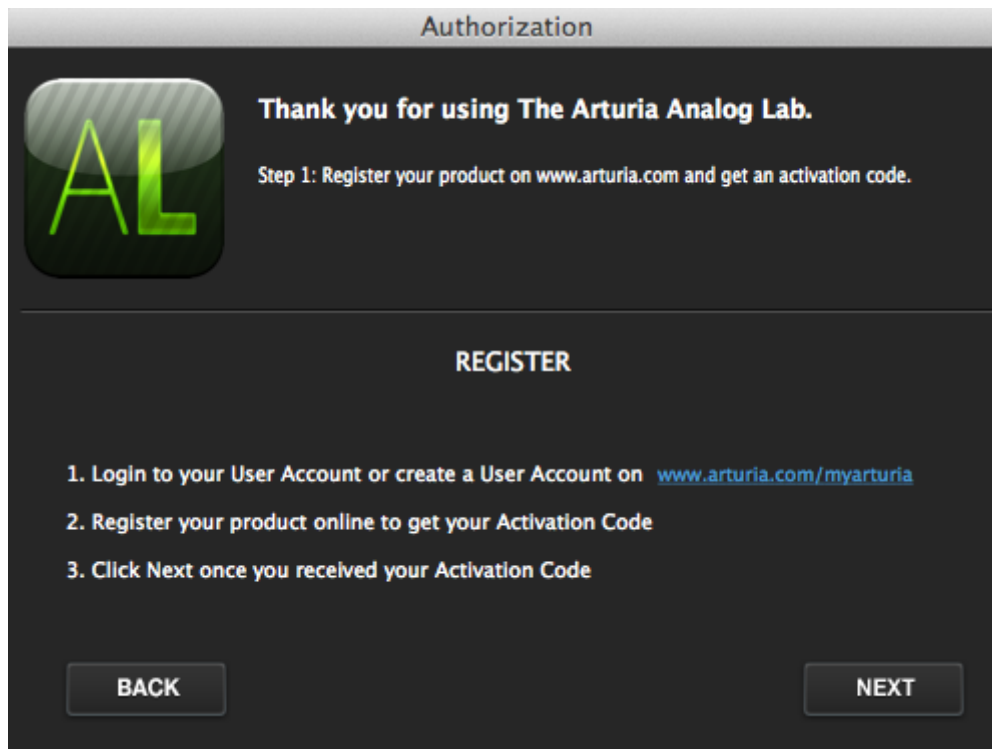
### 3.1 Registration

The first time you launch Analog Lab our 'Activation Wizard' will open:



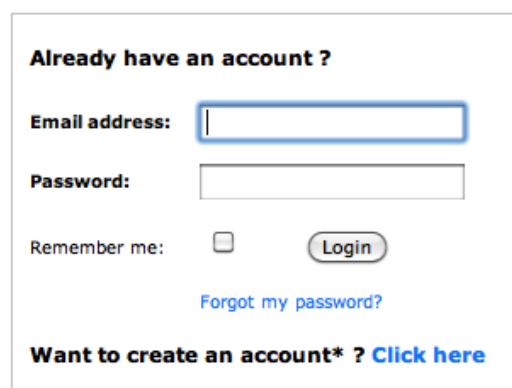
Click the 'Authorize' button to proceed. The screen that follows contains a link to the Arturia web site, where you have the option to sign into your existing Arturia account or create a new one.

This next window will stay open while you go through the registration steps online; once you've done that you'll use it to proceed through the activation steps that follow.



### 3.1.1 Log in or create a new user account

If you **already have** an Arturia account setup, simply log in:

The image shows a login form with the heading "Already have an account?". It contains two input fields: "Email address:" and "Password:". Below the password field is a "Remember me:" checkbox and a "Login" button. A blue link "Forgot my password?" is positioned below the checkbox. At the bottom of the form, there is a link "Want to create an account\* ? Click here".



If you don't have an Arturia account yet, please create one. When you do you will see this form:

**Create your account here**

\* Indicates required fields

Firstname: \*

Lastname: \*

Email address: \*

Confirm email: \*

Password: \*

Confirm password: \*

Address:

City:

State:

Zip/Postal code:

Country: \*

I wish to receive the Arturia newsletter:

Once you are logged into your account, you can register Analog Lab and request your activation code.

Go to the "My Registered Products" section of your account and click on the "Add" button:

**My Registered products & Syncrosoft Activation Codes**

Product	Serial number	Activation code	Date / Action
Minimoog V	011228311	0 Activation codes for this license.	<a href="#">Get your FREE UPDATE</a>

[Add](#) [Delete](#) [Technical Support inquiry](#)

The registration page that appears will ask you for a serial number and an unlock code for your software.

- If you purchased Analog Lab online, you will receive the serial number and an unlock code in an email confirmation
- If you purchased a controller keyboard such as MiniLab or some other Arturia controller that came bundled with Analog Lab, you will find the serial number and an unlock code on a sticker inside the Quick Start Guide that ships with the controller. It looks like this:



When you see the page pictured below, select “Analog Lab” or the appropriate Arturia controller from the pull-down menu, enter the serial number and unlock code in the appropriate spots, and click ‘Submit’:

**Add a license**

Product:\*

Serial number:\*  -  -  -

Please use :  
 XXXX-XXXX-XXXX-XXXX for Software  
 XX-XXX-XXX-XXX for Hardware

Unlock Code:

You should see the following confirmation screen. If the information is correct, click ‘Submit’ again:

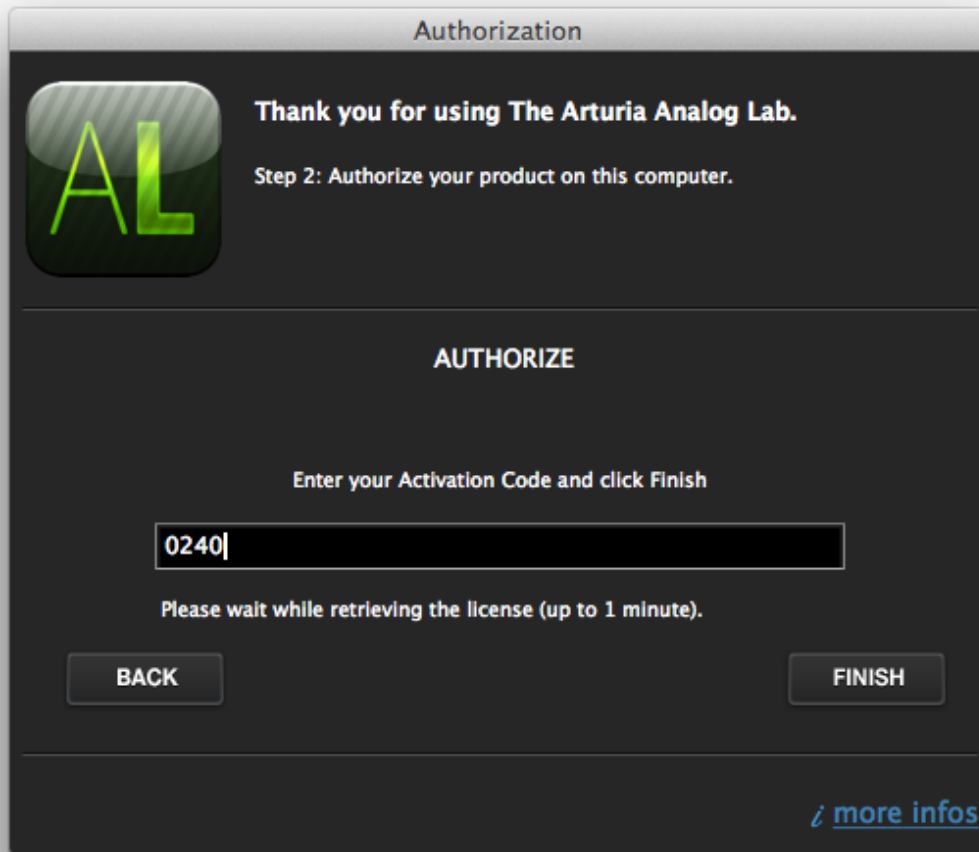
**Please confirm the following information:**

- E-mail address :
- Product : **Analog Lab**
- Serial Number : XXXX-XXXX-XXXX-XXXX

After this you will be shown a screen from which you can copy the **eLicenser activation code**. It will be sent to you by email as a backup, too.

Now let’s return to that Activation wizard window and click ‘Next’.

The third and final window of the Activation wizard will appear, and this is where you will enter the activation code.



Copy and paste the activation code into the space provided and click Finish. The software has now been authorized on your computer.

### **3.1.2 If all else fails...**


If the process described in the previous section fails for some reason, an error message will be displayed and the eLicenser Control Center should open automatically. You'll be able to enter the activation code by following the method described in the next section.

### 3.2 Entering activation code into eLicenser

Now that you have retrieved the **activation code**, launch the eLicenser Control Center (if it isn't already open). This application was automatically installed on your computer along with Analog Lab. You'll find it here:

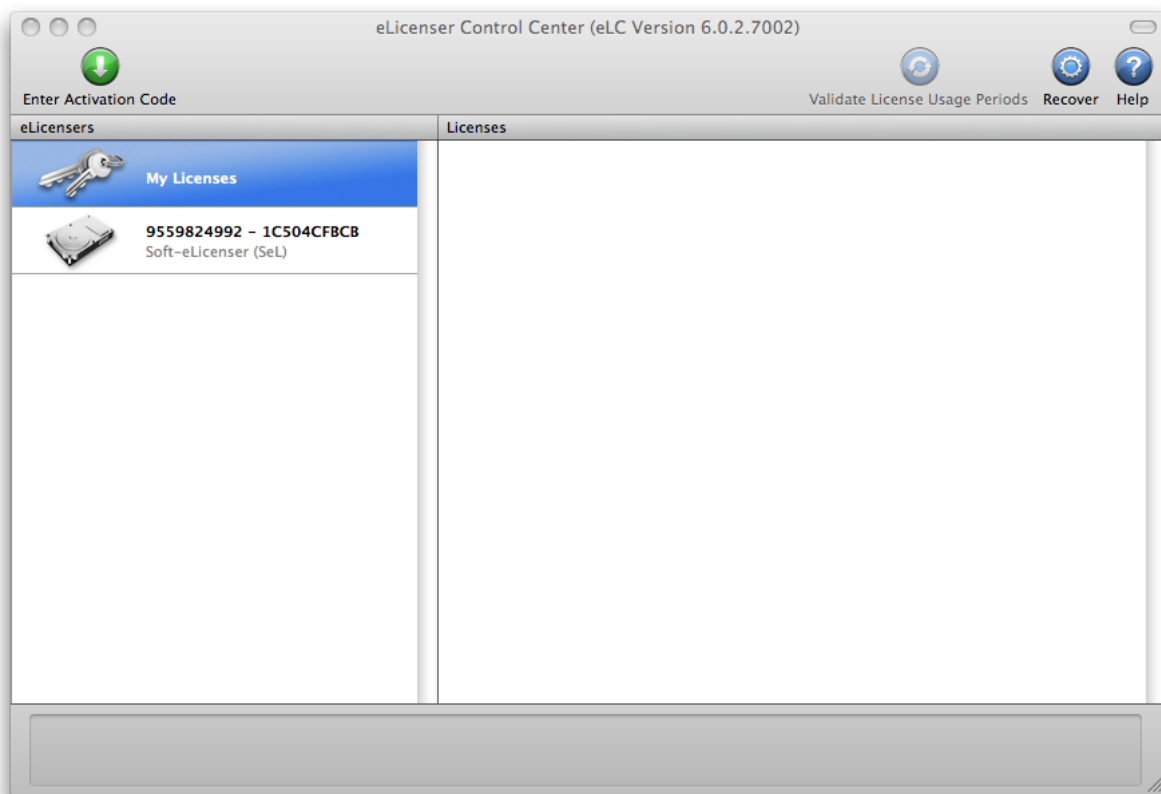
- Windows: Start > Programs > eLicenser > eLicenser Control Center
- Mac OS X: Finder > Applications > eLicenser Control Center

---

 The following screenshots were taken from a computer running Mac OS X; however, the process is basically identical on a machine running Windows XP/Vista/7/8. The graphical user interface and the wording may differ somewhat, but this should not hinder the process.

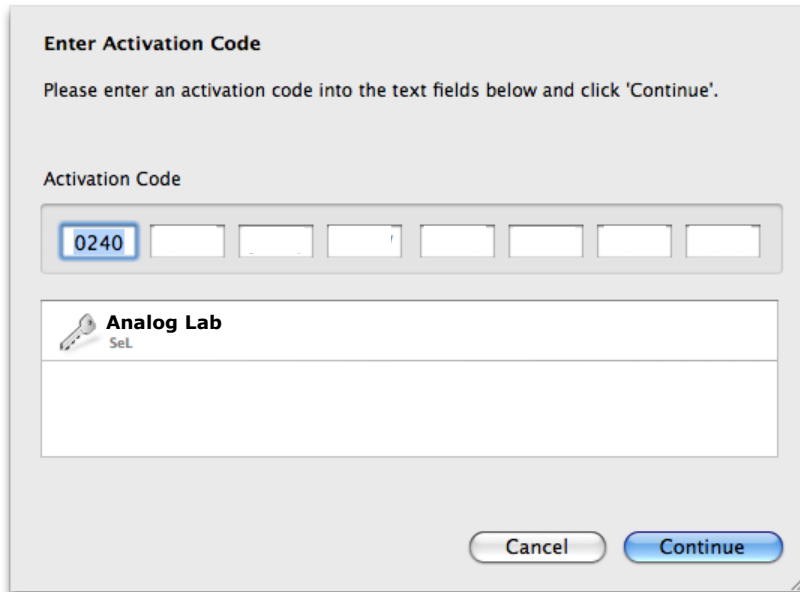
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In the eLicenser Control Center main window you should see a "SeL" virtual dongle installed onto your computer.



*The eLicenser Control Center main window, showing an empty Soft-eLicenser*


In the eLicenser Control Center menu, click on the "Enter Activation Code" button, and enter the code when prompted. Simply paste in the 32-digit code you've just copied from your account on the Arturia website:



*Enter the activation code*

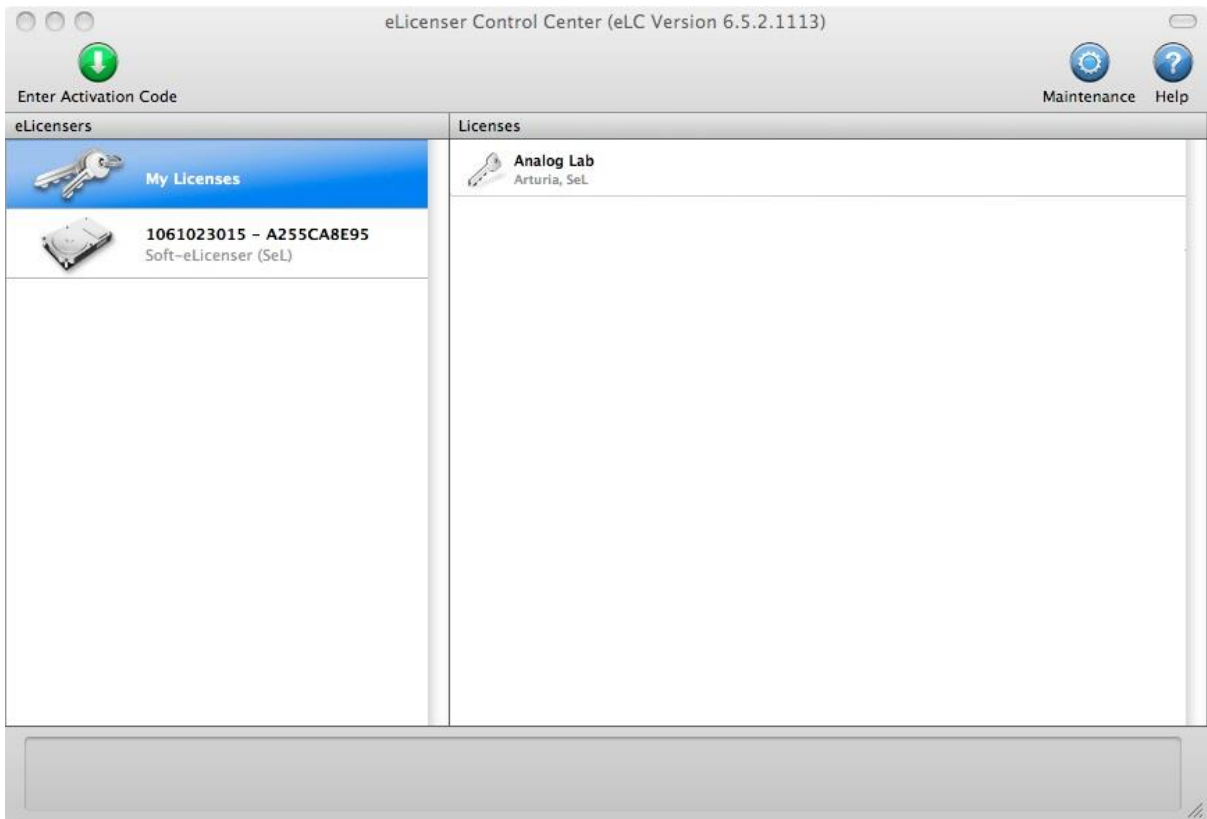
The eLicenser Control Center is now ready to download the software license that will allow you to use Analog Lab. Click "Continue" and the progress bar should advance until the download is complete. Once the popup window has confirmed completion of the download, click "Close".

---

 *If a USB-eLicenser hardware dongle is found connected to your computer, the Center will favor it as the default destination for the license download.*

---

Now the main eLicenser Control Center window should show your Analog Lab license installed and activated:



*License is installed and activated*

It's now time to launch the Analog Lab application.

## 4 ANALOG LAB QUICK START

The following chapter is a quick overview of how to start using Analog Lab immediately. It does not go into exhaustive detail; the goal here is to help you start enjoying the sounds as soon as possible. For more a more in-depth description of how Analog Lab works, please see [Chapter 5](#).

### 4.1 Audio & MIDI Setup

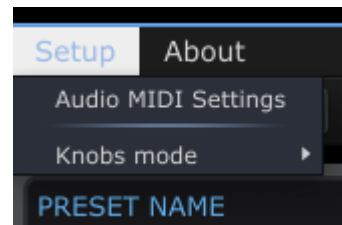
The first thing to do after launching Analog Lab is to make sure your software is set to output Audio correctly and that it will receive MIDI from an external keyboard.

#### 4.1.1 Audio setup

In order to check the audio driver settings for Analog Lab, open the Preferences window by pressing [Command] + [,] on the Mac keyboard or by selecting it from the Analog Lab drop-down menu (OS X and Windows).

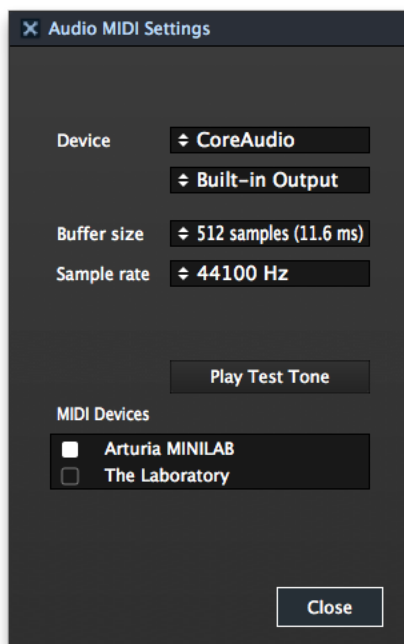


*The Preferences menu item on Mac OS X...*



*...and on Windows*

This will open the Audio & MIDI Settings window, which is where the preferred audio output device will be selected. Now click the Test button: If you hear a short sine wave, then your audio is set up correctly. If not, make sure the correct audio driver is selected and that your headphones or speakers are properly connected and turned on.



*Audio and MIDI Settings window*

### 4.1.2 MIDI setup

Your experience with Analog Lab will be seriously enhanced through the use of an external MIDI keyboard such as Arturia's MiniLab. As an added bonus, if your MIDI keyboard is one of ours, Analog Lab will detect which model it is and automatically configure its main screen with a virtual keyboard that matches the one you're using.

*Note: For the purpose of this manual we will assume you are using the default virtual keyboard interface for Analog Lab. If you are using an external controller please refer to the documentation for that unit while learning how best to use it with Analog Lab.*

Connecting a USB MIDI keyboard controller with Analog Lab is very simple. As shown in section 4.1.1 above, navigate to the Audio & MIDI Settings window and then click on the box inside the MIDI Devices section that corresponds to your USB MIDI keyboard. This will enable your USB keyboard to control Analog Lab.

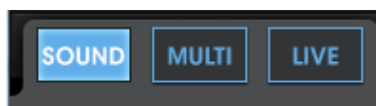
For information on the rest of the Audio MIDI Settings, see chapter 5.1.3.

## 4.2 Sound Mode Quick Start

### 4.2.1 Select a preset

Once your Audio preferences have been set, it's a breeze to make music with Analog Lab because it places over 5,000 production-ready sounds at your fingertips.

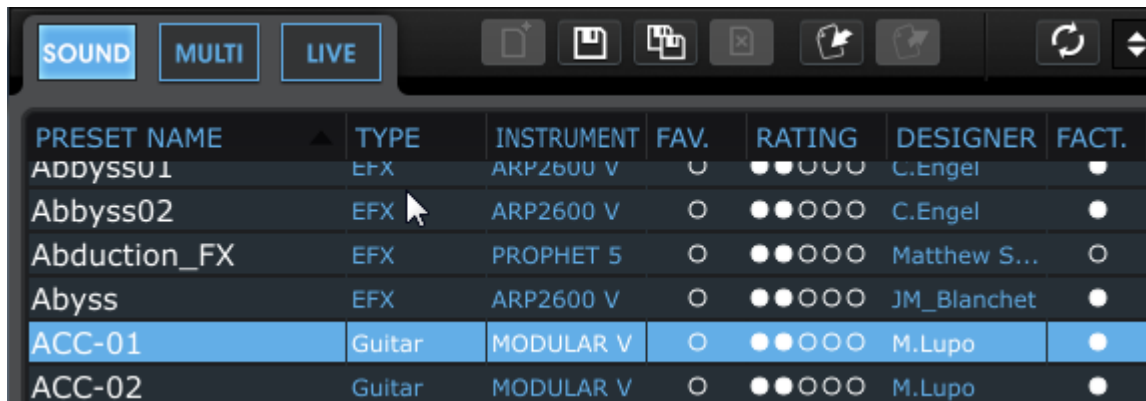
First, click on the "Sound" tab in the top-left corner of the main window to switch into Sound mode.



*Sound mode tab*



This calls up the Sound mode Preset Manager and displays a list of all available presets. From this window you are able to select single presets and play them from the virtual MIDI keyboard or by way of an external MIDI source.

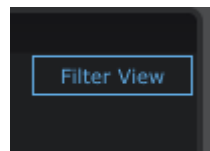


The Sound mode Preset list

Click on the name of a preset to select it. As shown above, it will become highlighted in blue to indicate which preset is the current selection.

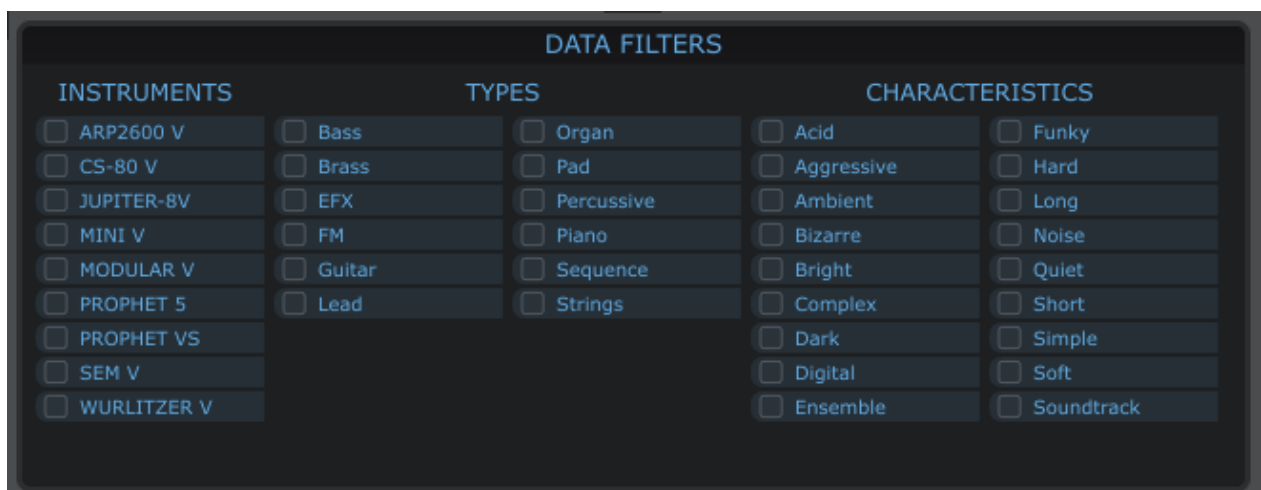
#### 4.2.2 Filtering and sorting the Preset list

Analog Lab offers lots of sorting and filtering options that are very handy when you are looking for a specific type of sound. To access them, click the 'Filter View' button in the upper-right corner of the Studio view:



The Filter View button

This will reveal the Data Filters window, which looks like this:



The Data Filter options in Sound mode

*Note: Depending on the size of your monitor you may need to click the KEYB button at the top of the application window to help you see all the filtering options.*

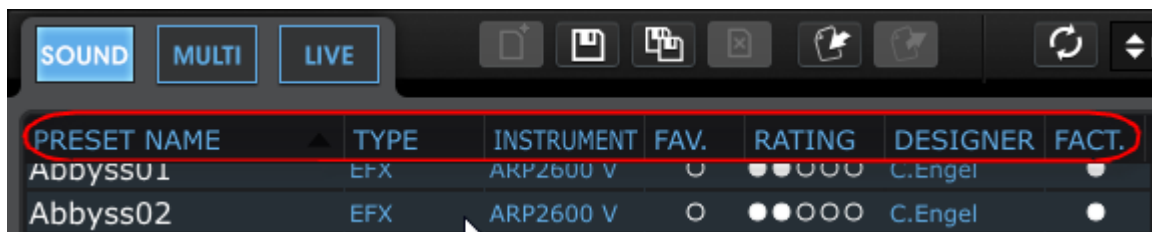
Use this window to zero in on the type of sound you want by telling Analog Lab you only want to be shown presets that contain one or more of the following characteristics:

- Type (Bass, Lead, Pad, Sequence, etc.)
- Instrument (the synthesizer on which the preset was developed)
- Characteristics (Aggressive, Ambient, Funky, Soundtrack, etc.)

You can then sort the results by column according to one of these classifications:

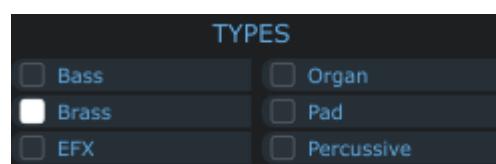
- Preset Name (alphabetical order)
- Type (Bass, Lead, Pad, Sequence, etc.)
- Instrument (the synthesizer on which the preset was developed)
- Favorite programs

...and other criteria such as Rating, Sound Designer, and Factory vs. User. Simply click on the desired column heading to choose the primary sort order.



*Select a column heading to specify the sorting criteria*

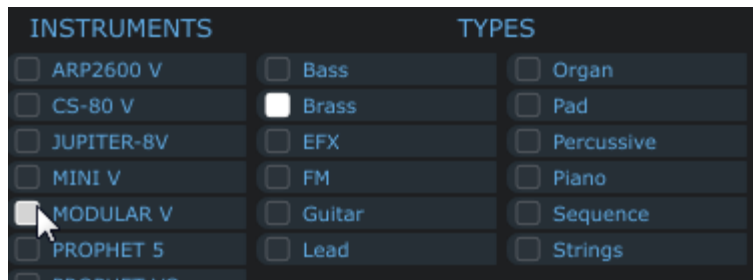
Let's work through an example. Maybe you're looking for a Brass sound: You can start by clicking "Brass" in the "Types" filter; the box next to Brass will turn white to show that this filter is active.



*Brass has been selected in the Types filter*

As soon as a filter selection is made the Preset list on the left will change to display only presets of the selected type (in this case, Brass).

Similarly, if you want to select only Brass sounds made by Modular V, for example, click the corresponding box in the Instruments filter column. Once again the Preset list will change, showing only presets that agree with the filter choices you have made.



*Modular V has been selected in the Instruments filter*

Now, thanks to the two active filters, only Brass sounds made using the Modular V instrument are visible in the Preset list:

PRESET NAME	TYPE	INSTRUMENT	FAV.	RATING	DESIGNER	FACT.
Tuba2	Brass	MODULAR V	<input type="radio"/>	●●○○○	Original	●
Shakehorn	Brass	MODULAR V	<input type="radio"/>	●●○○○	Original	●
SawBrass	Brass	MODULAR V	<input type="radio"/>	●●○○○	M.Lupo	●
OctBrass	Brass	MODULAR V	<input type="radio"/>	●●○○○	M.Geiss	●
Ober	Brass	MODULAR V	<input type="radio"/>	●●○○○	K.Ujiie	●
MemryBras3	Brass	MODULAR V	<input type="radio"/>	●●○○○	C.Engel	●
MemryBras2	Brass	MODULAR V	<input type="radio"/>	●●○○○	C.Engel	●
JUMPin	Brass	MODULAR V	<input type="radio"/>	●●○○○	K.Ujiie	●
JP8	Brass	MODULAR V	<input type="radio"/>	●●○○○	K.Ujiie	●
GentleScoup	Brass	MODULAR V	<input type="radio"/>	●●○○○	Original	●
FrHornz	Brass	MODULAR V	<input checked="" type="radio"/>	●●○○○	C.Engel	●
FireCrackA	Brass	MODULAR V	<input type="radio"/>	●●○○○	Matsutake	●
BrightBrass	Brass	MODULAR V	<input type="radio"/>	●●○○○	M.Lupo	●
BrassSynth3	Brass	MODULAR V	<input type="radio"/>	●●○○○	L.Llorca	●
BrassAt01	Brass	MODULAR V	<input type="radio"/>	●●○○○	M.Geiss	●
B_Mask	Brass	MODULAR V	<input type="radio"/>	●●○○○	Matsutake	●

*The list of presets that correspond to the “Modular V” and “Brass” filters*

Let's listen to the “OctBrass” preset toward the top of the list. To load the preset, just click on its name. If it is highlighted, it has been loaded.

PRESET NAME	TYPE	INSTRUMENT	FAV.	RATING	DESIGNER	FACT.
Tuba2	Brass	MODULAR V	<input type="radio"/>	●●○○○	Original	●
Shakehorn	Brass	MODULAR V	<input type="radio"/>	●●○○○	Original	●
SawBrass	Brass	MODULAR V	<input type="radio"/>	●●○○○	M.Lupo	●
OctBrass	Brass	MODULAR V	<input type="radio"/>	●●○○○	M.Geiss	●
Ober	Brass	MODULAR V	<input type="radio"/>	●●○○○	K.Ujiie	●

*“OctBrass” preset is selected*

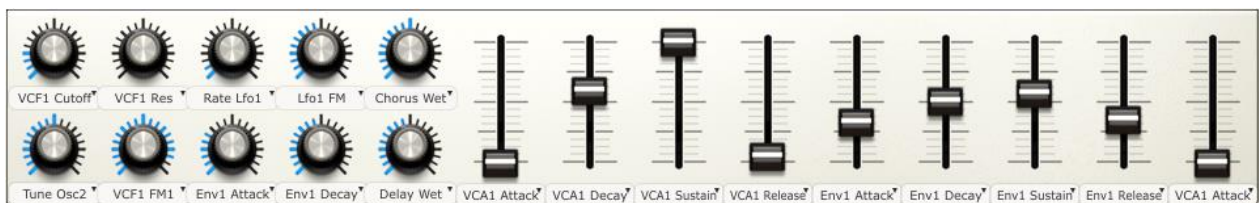
If you have an even more specific idea of the sound you are looking for you can add additional filter criteria using one of the Characteristics filters. If you click on the “Bright” box, for example, the Preset list will now display only bright-sounding Brass presets that were made using Modular V. As you can see, “OctBrass” is still contained in the list because it has a characteristically bright tone.

### 4.2.3 Modify a preset

Analog Lab has a lot of great features, but among the best are the assignable knobs and faders in the Controls section of the virtual keyboard. The exact number and position of these controls may vary depending on which Arturia controller has been detected by Analog Lab, but no matter which model is shown the result will be the same: Those knobs and faders make it possible to modify a preset to suit your needs for a session, or to set up the controls with your favorite parameters for live performance.

*Note: When you switch presets you’ll notice that the assignments of some of the controls may change; this is due to a number of factors such as the parameter names on the original synthesizers (Emphasis vs. Resonance, etc.) and the presence or absence of certain parameters on a given synth.*

Let’s continue using the “OctBrass” preset while we focus on the Controls section. If you’re using the default virtual keyboard the knobs and sliders should look like this:



*The Controls section*

Let’s say that you’ve decided that “OctBrass” is very close to what you want, but you'd actually like it to be brighter than it is. All you have to do is turn the VCF1 Cutoff knob in the Controls section clockwise until you reach the desired sound.




*Filter Cutoff knob (VCF1)*

Now let’s say that we want the preset to have a quick attack. To do that, simply adjust the controls labeled “AttackTime Env1” and “AttackTime VCA1” to their minimum positions.

By making these slight modifications to the original “OctBrass” preset we have transformed our sound from a mellow synth brass into an aggressive polysynth. You can modify it further by changing the release time or any other available parameter; there is a huge range of sonic possibilities within these parameters.

Please see Chapter 5.4.5 for more information regarding the functions of these controls.

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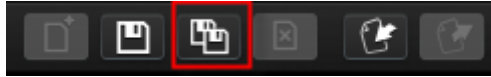
 You must own a copy of the instrument you are editing in order to have full access to all of its parameters.

---

#### 4.2.4 Saving a User preset

If you own the instrument you have been editing, then once a preset has been modified to fit your needs it can be saved as a User preset. After this you'll be able recall it as easily as any other preset. You can even add filtering options so it shows up along with other presets of similar characteristics.

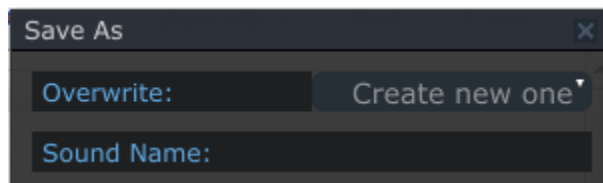
Let's take our modified "OctBrass" preset and hit the "Save As" button on the tool bar:



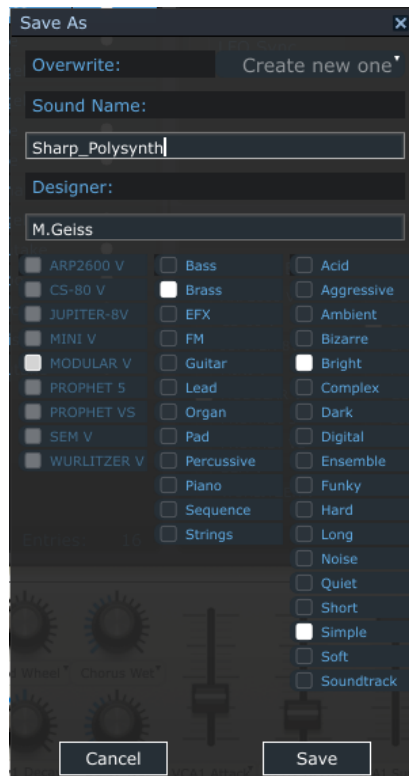
The 'Save As' button

A window will open and allow you to define a number of details for your preset.

At the very top of the window under the words 'Save As' is a feature labeled 'Overwrite'. It allows you to choose whether you'd like to overwrite a previous version of a User preset (Overwrite) or create an alternate version (Create new one). These are available inside a pull-down menu:



So after that choice is made, the next thing to do is enter a new name in the Sound Name field.



Be sure to select one of the "Types" and some "Characteristics" so you can locate your preset more easily in the future. After you have done this, click the "Save" button. If the filter options of your new preset match the current filter settings, your new preset will appear in the Preset list of the Sound Search window.

*Note that there are settings like Pitchbend Range and Polyphony in the Preset details window that can be customized for your new preset as well (see section 5.4.4 for more information).*

### **4.3 Window management**

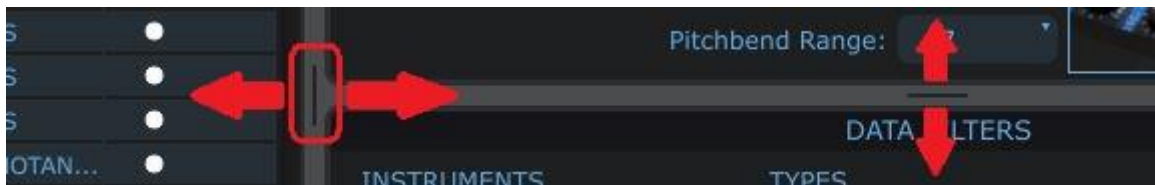
Now that you've learned a few basics we want to show you a few things that will help you configure the Analog Lab screen to suit your needs.

We've been focusing on the features of individual windows, but there are some features related to the boundaries *between* the windows that are pretty useful, too!

#### **4.3.1 Click and resize**

Each window is framed by a gray border, as you've noticed. But what is less obvious are the tabs you can use to move those borders and make a window larger or smaller.

There are two examples of this in Sound mode, right in the middle of the screen:

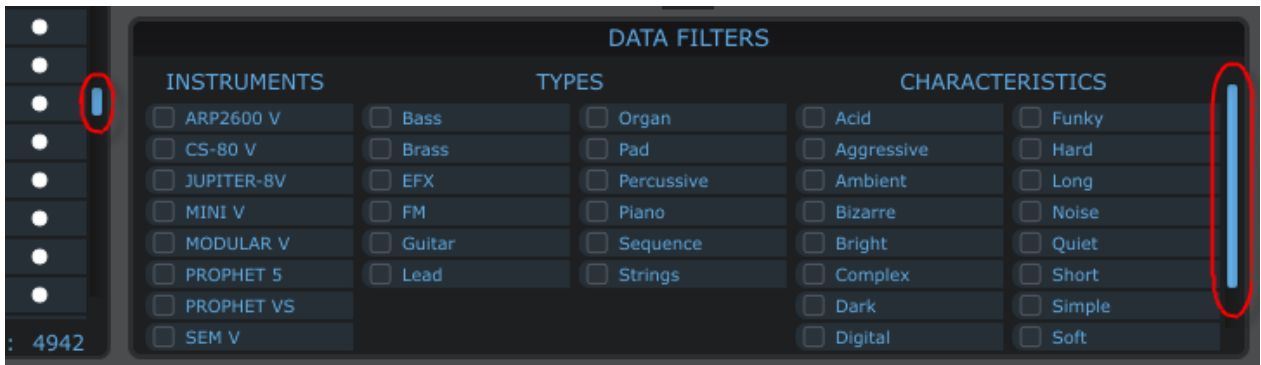


Click on one of those tabs and move it in either direction until the proportions of the various windows seem right to you.

#### **4.3.2 Scroll bars**

Some windows contain more information than can be displayed on a computer monitor. The Sound mode Preset list is a perfect example of this: if we tried to put all 5,000 Sounds in one window their names would be too small to read!

When this is the case you'll see a couple of blue scroll bar indicators at one edge of the window in question. If you don't have a scroll wheel on your mouse, then click one of those blue scroll bars and move it the direction you want the window to move.



## 4.4 Taking a Snapshot

The Snapshot feature of Analog Lab gives you even faster access to your favorite presets. If you find yourself frequently using a particular Sound or Multi, save it as a Snapshot. You can store up to ten Snapshots, depending on the selected controller type, and they will be reloaded when you launch Analog Lab for instant recall.

*Note: We'll discuss what a Multi is and how to create one in Chapter 5.5. For now it'll suffice to know that a Multi is a split or layered arrangement of two Sounds.*

You'll find the Snapshot tab on the left side of the virtual keyboard's top panel:



*Location of the Snapshots tab*

When you click on the blue area (the "tab") it will open up the Snapshots section, which looks like this:



*The Snapshots section*



You can see the blue Snapshots tab has moved to the right side of the above picture. When you want to close the Snapshots window, click its tab again.

It's very easy to store the current preset as a Snapshot; simply drag it onto one of the Snapshot buttons.

For example: If you open the "daf" preset by clicking on it, all you have to do to save it as a Snapshot is drag it to the Snapshot 1 button.

The same holds true for the Multis as well: Grab one or more favorites and drag each to its own Snapshot button.

In the following picture you'll see what it looks like when two Snapshots have been created, one holding a Sound (S) and another holding a Multi (M). The red button indicates which of the two Snapshots is currently selected:



*Two Snapshots ready to go*

Now you can recall those presets at any time simply by clicking on the desired Snapshot button. They are never more than two clicks away: click the Snapshots tab, click the Snapshot button, and your preset will be at the ready.

## **4.5 Multi Mode Quick Start**

### **4.5.1 Select a Multi preset**

First a quick definition: A Multi is a combination of any two Sounds that can be triggered at the same time from a single keyboard. They can be layered together or split, with one on the left side of the keyboard and the other on the right.

That's just the tip of the iceberg, though: Each Sound in the Multi (known as a 'Part') has an independent setting for level, stereo panning, two FX sends, and transposition (both chromatic and/or by octaves). You can also determine which Part will be affected by MIDI messages such as pitch bend, mod wheel, aftertouch, sustain and expression.



The Multi itself allows you to select two different effects and edit them to suit your needs. There is also a Master section with control over the levels of the FX returns and the overall level of the Multi.

And just like in Sound mode, we've given you a large selection of ready-made Multis that you can use as-is or as a basis for your own Multis. Take a spin through the Multi list! We may have already created what you need for a given project.

There's more to say, but for now let's just get into Multi mode. To do this, click the "Multi" tab in the tool bar:



Multi mode tab

From this window you are able to select the Multi presets and play them using the virtual keyboard or an external MIDI source. As with Sound mode, the selected Multi will be highlighted in blue:



Multi mode window

And also as with Sound mode, you can sort the list of Multis according to the columns on the top of the Multi window: Preset Name, Favorite, Rating, Designer, Genre, and Factory/User.

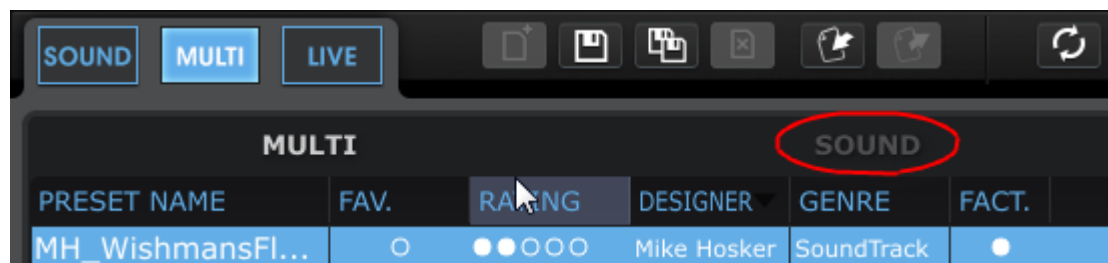
The Preset details window on the right side of the screen tells you a lot at a glance: the two Parts are clearly marked (Part 1 and Part 2), and you can see the name of the Sound that was used for each Part inside the smaller windows.

Notice that Part 1 is outlined in red, while Part 2 is outlined in yellow. This color-coding scheme is used elsewhere in the details window, such as in the 'MIDI and Split' section: you can see immediately that this is a split Multi, with Part 1 covering the upper half of the keyboard (the thick red line) and Part 2 assigned to the lower half of the keyboard (the thick yellow line). The key ranges, MIDI channels, and transposition information for each part are also color-coded in the boxes to the right of the smaller keyboard graphic.

We'll dive into a serious explanation of everything a Multi can do in Chapter 5.5. But there's one more feature that should be explained now: How to change which Sound(s) are being used within the Multi.

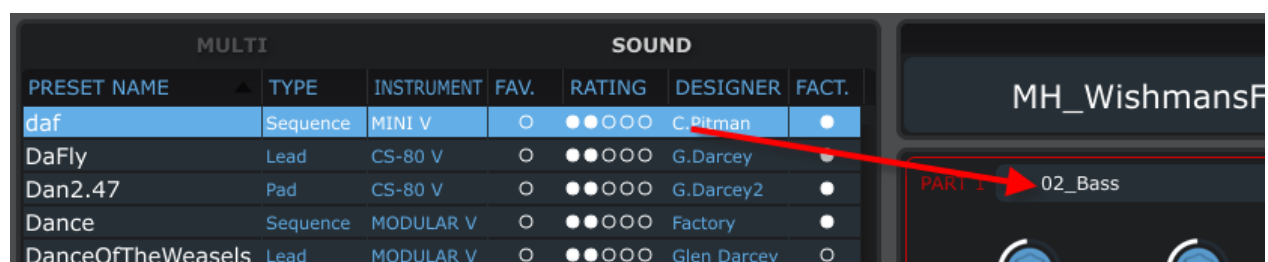
### 4.5.2 Changing a Sound within a Multi

Look at the top of the Multi mode window:



See the grayed-out word 'Sound' at the top of the Preset list window? Click on this word and the entire list of Sounds from Sound mode becomes visible. You can sort the Sound list inside Multi mode by clicking on the columns just as you would in Sound mode.

Click on one of the Sounds from this list and drag it on top of the name of the Sound inside the Part 1 window or the Part 2 window: the Sound you dropped inside the Part will now be present inside the Multi.



For more details on how to edit a Multi, see Chapter 5.5.

### 4.5.3 Saving an edited Multi as a User program

Just a few simple changes can result in a unique and useful Multi. So if you've made something you'd like to keep, it's easy to do:

- Click the 'Save As' button
- Give the Multi a name
- Select its Genre
- Click 'Save'.

You've just created your own Multi!

#### 4.5.4 Start a Multi from Scratch

Our sound designers have done marvelous work supplying all sorts of great Multis, and it's sometimes faster to find something that's in the ballpark and make some minor adjustments to suit the task at hand. But building something from the ground up can be a lot of fun and a great source of inspiration as well.

So if you'd like to start with a blank slate, click the 'New' button in the tool bar:



*Note: the 'New' button is only active in Multi mode.*

#### 4.6 Live Mode Quick Start

There's a third performance option for Analog Lab positioned next to the Sound and Multi mode buttons for easy access: Live mode.

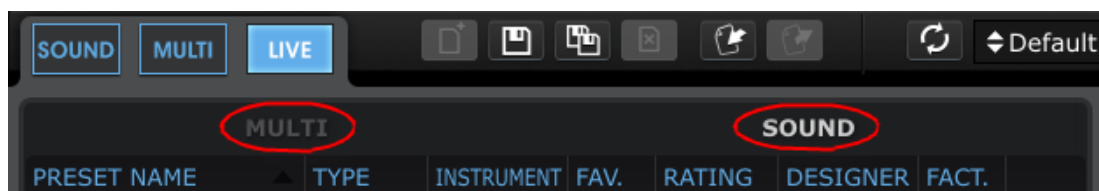
Simply put, this mode allows you to construct a set list, for example, by assigning Sounds and/or Multis to particular MIDI program change numbers for instant recall from a MIDI controller keyboard or a host application such as a DAW.

We'll delve into the details of Live mode in chapter 5. But for now if you'd like to try it out, click the Live mode button:

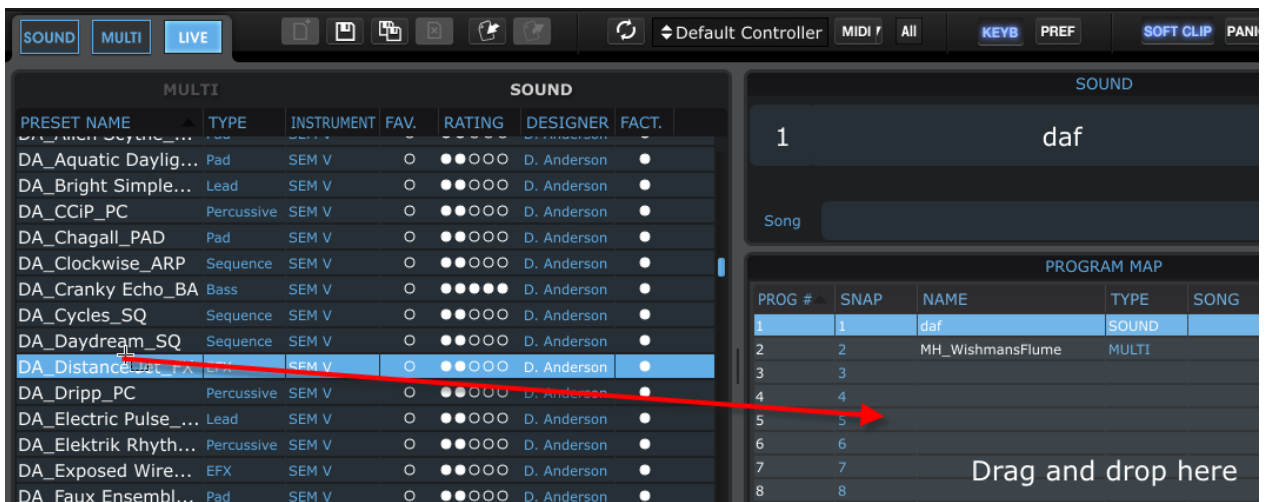


*Live mode selected*

Then decide whether you want to place a Multi or a Sound into your set list by selecting one or the other category at the top of the Preset list:



Let's work with Sounds for now. Click on one of the Sound names and drag it over to the Program Map section on the right side of the Live mode window:



To select a different item, either drag another Sound from the Sound list or switch to the Multi category and repeat the process.

There's a lot more you can do with Live mode! See section 5.7 for more information.

## 5 USING ANALOG LAB

Analog Lab builds upon the success of its predecessors Analog Laboratory, Analog Factory, and Analog Player. Like those esteemed software packages, it contains thousands of presets taken from Arturia's award-winning emulations of the world's greatest hardware synthesizers.

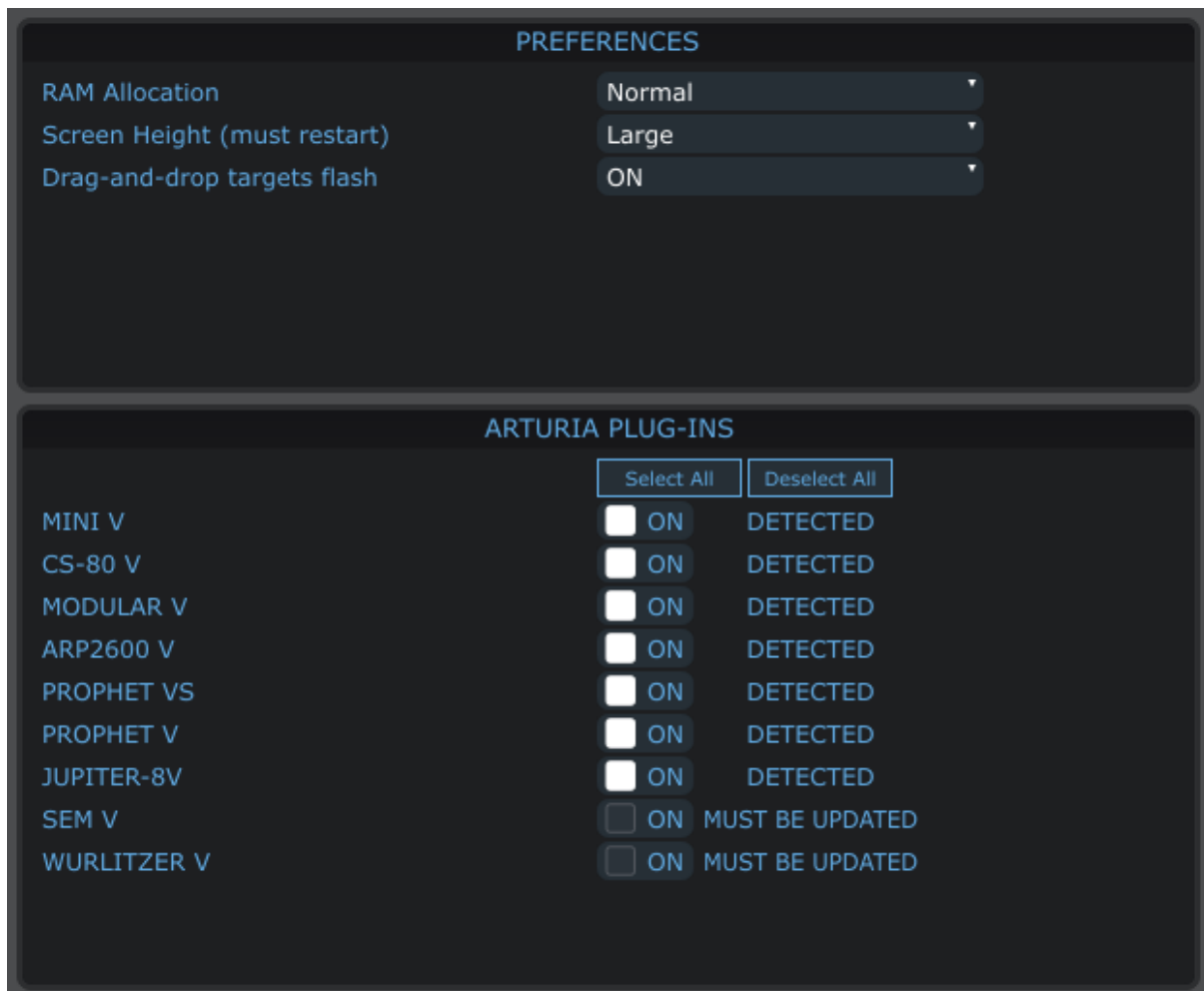
This chapter will go in-depth into the features Analog Lab offers so you can get the most out of this incredible software.

### 5.1 Configuration

#### 5.1.1 General options



Preferences are set by clicking on the PREF button on the right half of the tool bar.



*The "Preferences" window*

The following options are available:

---

<b>RAM Allocation</b>	Low, Normal, Comfortable, No Limit
<b>Screen Height</b>	Small, Medium or Large. You must restart Analog Lab for this change to take effect.
<b>Drag-and-drop targets flash</b>	When dragging a Sound to a Part in Multi mode, or when dragging a Sound or Multi to one of the Program Map locations in Live mode, this setting determines whether the target for the selected item will flash or not. Once you learn what can go where you may not need the reminder, so you might choose later to set this to Off. The default setting is On.

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### 5.1.2 Arturia Plug-ins

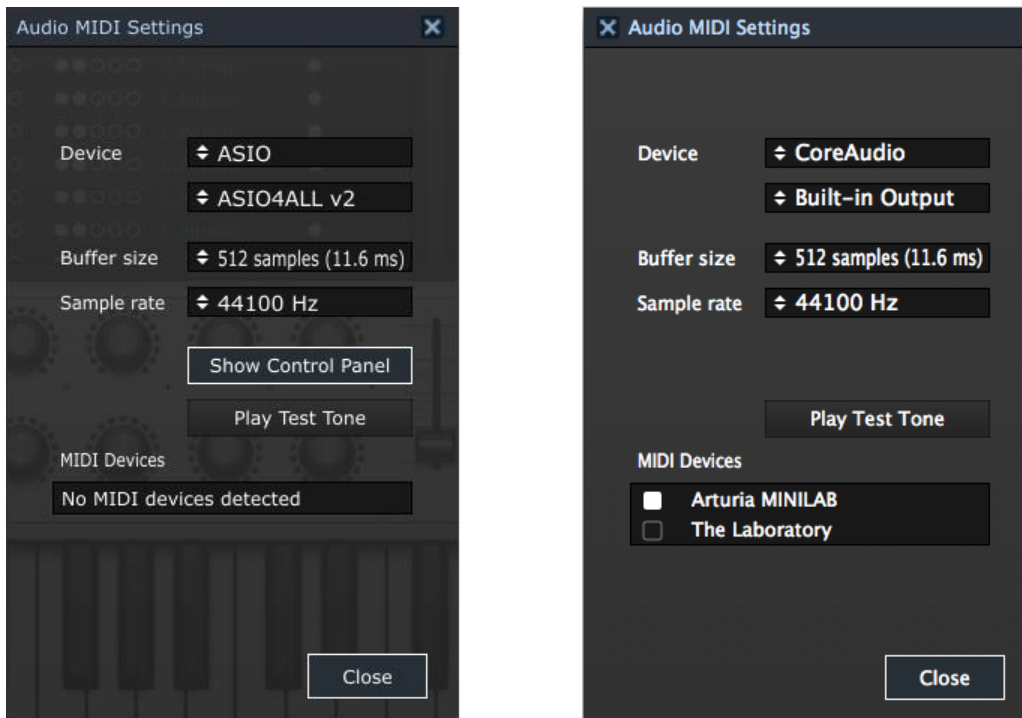
The Arturia Plug-ins section of the Preferences window indicates whether Analog Lab has found full versions of Arturia plug-ins installed on your computer (i.e., purchased and authorized, not the Demo versions).

- **Detected:** Analog Lab has found the full version of the plug-in and it can be enabled or disabled.
- **Not Detected:** Analog Lab has not found the full version of the plug-in. Demo versions of the plug-ins will not be detected.
- **Must Be Updated:** The installed version of the plug-in does not match the minimum version requirement and needs to be updated. Check the Arturia web site for the latest version of this plug-in.
- **Not Authorized:** The full version of the plug-in has been found but there is no license for it in the eLicenser. You must activate this product in order to use it for editing.

*Note: A basic level of sound editing capability is always available within Analog Lab. Authorization allows access to the full editing capability of that instrument.*

### 5.1.3 Audio & MIDI Settings

The Audio & MIDI Settings window is where you can define basic Audio and MIDI options.



The “Audio & MIDI Settings” windows for Windows and Mac OS X

**DEVICE** The top line allows you to select the audio driver for Analog Lab.

The second line chooses the audio output. The default setting is “Built-in Output” for the Mac; for Windows we highly recommend the use of an adequate ASIO driver for your sound card.

**TEST** Sends out a short sine wave tone to help make sure sound is being sent out the correct device.

**SAMPLE RATE** Chooses the sample rate; the default is 44.1 KHz. Increasing the sample rate increases the quality of sound, but adds a bigger load to the CPU.

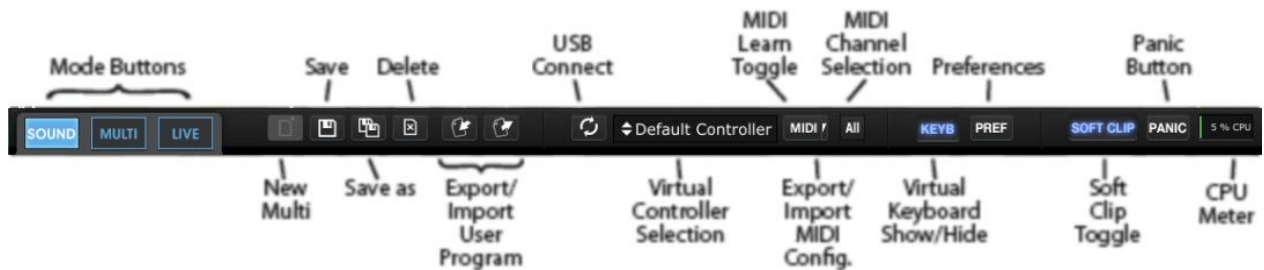
**AUDIO BUFFER SIZE** Chooses the audio buffer size, displayed in samples and milliseconds. The default is 512 samples. Decreasing this number lowers latency, but adds more load to the CPU. Increasing this number lessens the load on the CPU but increases latency (the delay between a played note and actual sound output).

**ACTIVE MIDI INPUTS** Displays the available MIDI inputs that can be used to control Analog Lab. For example, if you'd like to use an external keyboard with Analog Lab, it can be selected here.



## 5.2 Tool Bar

The tool bar consists of a set of essential icons, organized from left to right:



Tool Bar

The tool bar allows you to see or have access to:

<b>Sound</b>	Selects the Sound mode page, the starting point for everything in Analog Lab
<b>Multi</b>	Places Analog Lab into Multi mode, where two Sounds may be played from the controller and processed independently
<b>Live</b>	Enters Live mode, where up to 128 Sounds and/or Multis can be placed in the desired order for a performance or easy DAW access
<b>New</b>	Creates an empty Multi with no assignments for Sound or FX, etc.
<b>Save</b>	Saves changes to the current User program.
<b>Save As</b>	Allows you to save a modified Sound or Multi, give it a new name, and add a number of filter labels for ease of location. This new program will then be a User program, not a Factory program.  ⚠ <i>It is not possible to save or delete a Factory preset (the ones installed with the software). However, the Save As function allows the modification and saving of a Factory preset under a user-defined name.</i>
<b>Delete</b>	You can delete the selected User program by clicking this button.
<b>Export</b>	Will export the selected User program. Click on "Export", choose a destination for the document which will be created (*.Isx for a Sound, *.Imx for a Multi), and give it a unique name. This file contains a single User Sound or a single User Multi, depending on what has been selected.  ⚠ <i>It is not possible to Import/Export factory presets.</i>
<b>Import</b>	Will import a single User program into Analog Lab, giving you the ability to add new User programs to your personal collection. This file will be in the format *.Isx (for a Sound) or *.Imx (for a Multi), and will contain one User Sound or one User Multi.
<b>Connect</b>	If you started Analog Lab before connecting your USB MIDI controller, click this button to establish the MIDI connection.
<b>Virtual Controller</b>	Select which virtual controller will be seen when Analog Lab starts



<b>MIDI</b>	Enables 'learn' mode for the virtual controls in Analog Lab. Each control can be linked to an incoming MIDI control message, and the entire set of learned assignments is called a Configuration.  Click on the drop-down arrow to access the MIDI Configuration export/import menu.
<b>All</b>	Click the button and a drop-down menu allows you to choose the master MIDI channel for Analog Lab (All, 1-16). The Default is ALL, which means Analog Lab will respond to data sent on any MIDI channel (Omni mode).
<b>Keyb</b>	Show or hide the keys of the virtual keyboard. The Controls section will remain visible.
<b>Pref</b>	Opens the Preferences window so the screen height, knob mode and other preferences can be set. Also displays the status of the Arturia plug-ins.
<b>Soft Clip</b>	Helps avoid digital distortion when the output signal becomes very hot. You might want that sometimes, though, so we've given you the option to disable this feature.
<b>Panic</b>	Shuts off all notes
<b>CPU meter</b>	Allows you to gauge the load a Sound or Multi is placing on your computer's processing resources.

## 5.3 Virtual keyboard

The virtual keyboard in Analog Lab gives you access to both a click-and-play keyboard and a slew of controls which you can use to modify the Sounds. Let's work our way through each section.

### 5.3.1 Virtual keyboard options

When Analog Lab detects your Arturia controller it automatically chooses a virtual keyboard that matches that unit's appearance and functionality, so all of your controls are visible on the computer and their assignments match instantly. If you would like to override this assignment, or if you don't have an Arturia keyboard connected to Analog Lab, then there's a pull-down menu in the tool bar that allows you to select one of four controller types.



Select the one that most closely matches the number of controls available on your MIDI controller. Analog Lab will remember this choice the next time it starts.

## 5.3.2 Virtual keyboards: Common controls and features

### 5.3.2.1 Master Volume

Each of the virtual keyboard choices has a Master Volume knob in roughly the same location: between the pitch/mod wheels (or strips) and the Controls section. This knob allows you to set the overall volume of Analog Lab and will not change when a new preset is selected.

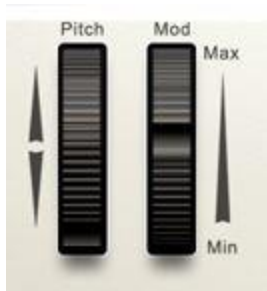


Master Volume knob

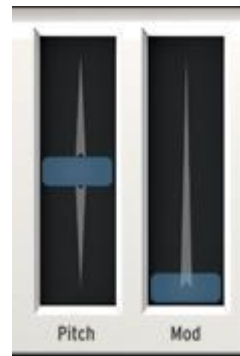
Click and drag this control to adjust the Master Volume.

### 5.3.2.2 Pitchbend and Modulation wheels / touch strips

Depending on the virtual keyboard you have selected their appearance may vary, but you will always have one or the other set of these controls on the left side:



Pitch / Mod wheels



Touch strips


---

**Pitch** Controls the pitch of the sound. Click and drag up or down to alter the pitch of the active Sound.

---

**Mod** Controls the modulation depth (MIDI controller #1). Click and drag upward to increase the modulation, and vice versa.

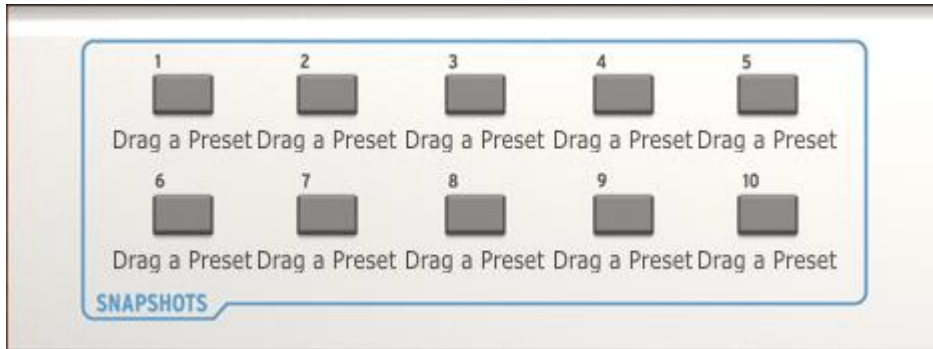
---

 *The modulation wheel is not necessarily connected on every preset.*

---

### 5.3.2.3 Snapshots tab

The vertical blue label on the left side of the keyboard hides the Snapshot buttons for the virtual keyboard. The number of available Snapshots varies for each keyboard option. Click this label and the Snapshots panel will open, revealing the Snapshot buttons. Click it again and the Snapshots panel will close.

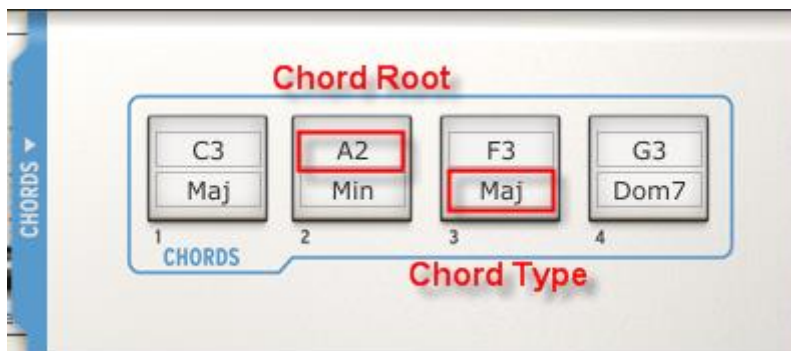


To create a Snapshot, click on a Sound or Multi and drag it on top of the Snapshot button. Then next time you want to find that preset, simply open the Snapshots tab and click on that button. The Sound or Multi you placed there will be loaded into memory.

In addition to the convenience of having your favorite Sounds or Multis available from the pads of your Arturia controller keyboard, the Snapshots can also be useful for comparing modifications to a given Sound in order to choose which version fits best into a project. For example, you could store multiple versions of the same preset with different Filter settings, effects, decay times, etc., and call them up on the fly to see which one works the best for that situation.

#### 5.3.2.4 Pads tab

As with the Snapshots tab, the vertical blue label on the *right* side of the keyboard hides the Pad group for the virtual keyboard. The number of available Pads varies for each keyboard option. Click this label and the Snapshots panel will open, revealing the Snapshot buttons. Click it again and the Pads panel will close.



The pads allow you to specify and trigger chords when you click the pad. To do this, click inside each field and select the values you want: for example, if you want the pad to trigger a C Maj 7 chord in the middle of the keyboard range, select C3 from the Chord Root menu and Maj7 from the Chord Type menu. These settings will be remembered the next time you launch Analog Lab.

#### 5.3.2.5 5-octave keyboard

In the absence of an external USB MIDI controller, you can still audition the edits you make to a Sound or Multi by clicking on the virtual keyboard.

### 5.3.3 Virtual keyboards: To each its own control section



*Default controller / Laboratory controller*

The Laboratory virtual controller is the default. It has the largest number of controls: ten knobs, nine sliders, ten Snapshot buttons, and four pads.



*Player controller*

The Player virtual controller gives you eight knobs, plus four Snapshot buttons and eight pads.



*Factory controller*

The Factory virtual controller offers ten knobs, four sliders, eight Snapshots and four pads.



*MiniLab controller*

The MiniLab virtual controller gives you fourteen knobs, eight Snapshots and eight pads.



*KeyLab controller*

The KeyLab virtual controller gives you ten knobs, nine faders, ten Snapshots and sixteen pads.

### 5.3.4 Assignable MIDI control of parameters

The knobs and sliders on the virtual keyboard can 'learn' which external MIDI controls you want to use to control the parameters inside Analog Lab. This is very easy to do.

Before we proceed, make sure the MIDI device you want to use is connected to the computer and has been selected in the Audio & MIDI settings window inside Analog Lab (see section 5.1.3).

The channel on which MIDI data will be received is either defined for the Analog Lab plug-in by the host DAW or defined by the Analog Lab application itself in standalone mode.

Once the overall MIDI channel has been specified it is possible to 'mark' a particular incoming MIDI message as belonging to a particular virtual control in Analog Lab.

To do this, click on the MIDI button in the tool bar and all virtual controls in Analog Lab will be highlighted in purple. Then click the Analog Lab control you want to assign.

The 'MIDI Control Setup' window will appear, allowing the selected virtual control in Analog Lab to learn the MIDI control number of whichever control you activate on your hardware controller.



*Assigning an external MIDI controller*

Let's discuss the information in the above window.

- **Learning...** Signifies that the selected Analog Lab control is waiting to receive MIDI information from the hardware control you activate.
- **Control name:** Lets you know the internal identity Analog Lab has assigned to the virtual control you have selected. It is not possible to edit this name.
- **Min / Max:** These two graphics indicate the detected range of motion for the external control. Be sure to move the external control through its entire range while establishing the connection; this will maximize the resolution of the control.
- **Unassigned:** You'll either see the word "Unassigned" here or the incoming MIDI CC number related to the data being generated by the hardware control.
- **Is Relative:** If the hardware control sends data in a relative format, leave this box checked. If it sends data in a linear fashion (hardwired from 0-127), uncheck this box. A proper setting will ensure a reliable response between hardware and software for this parameter. Refer to the documentation for your hardware controller if you do not know which option you should use.
- **Unassign:** To deactivate the MIDI connection of a particular control, select it as described above and then simply click the "Unassign" option in the MIDI Control Setup window.

Once a virtual control has been linked to an external MIDI control its color will change from purple to red and stay that way until Analog Lab leaves MIDI Control Setup mode.

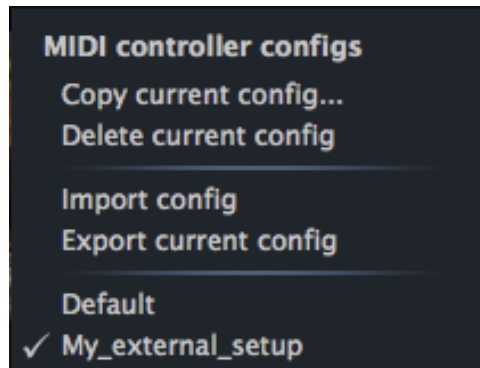
To close the MIDI Control Setup window, click the MIDI button in the tool bar again.

### **5.3.5 Exporting/Importing the MIDI Configuration (\*.lab2midi)**

Once you've completed a set of MIDI Control Setup assignments to your external USB MIDI controller, be sure to export them as a backup. You can also create and export a different set of control assignments for a different MIDI controller depending on where you'll be working or performing. Multiple Configurations can be listed in the drop-down list and are available for immediate selection.

To access these features, click on the arrow next to the MIDI button in the tool bar:





Here's a breakdown of what each of those features does:

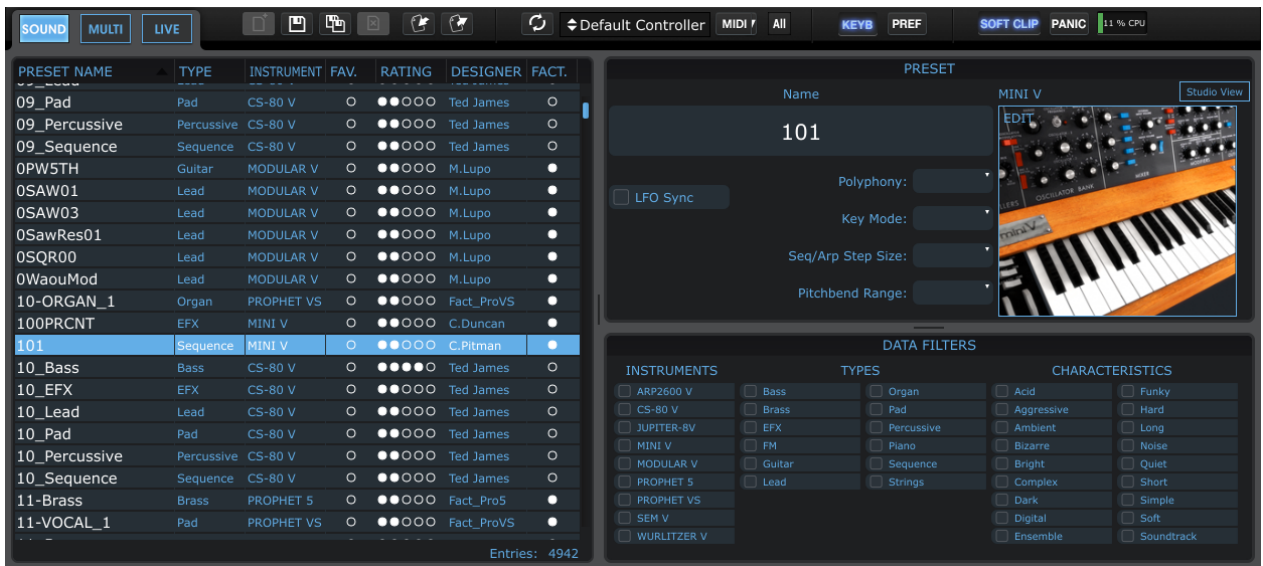
<b>Copy current config</b>	Any changes you make to the current configuration become part of that configuration. So be sure to use this feature before you create a new configuration so will not accidentally alter the current configuration. A window will prompt you to give the new Configuration a name, after which it will appear at the bottom of the drop-down list.
<b>Delete current config</b>	<p>Note: Be sure to export a configuration first before deleting it! You may decide you want to use it later after all.</p> <p>Based on the picture above, if you were to select "Delete" the configuration "My_external_setup" would be deleted from the drop-down list. If you have exported it before deleting it then it will still remain in the folder where you placed it, and you can re-import it later from there.</p>
<b>Import config</b>	Allows you to import a configuration from whatever location you have used as an export destination.
<b>Export current config</b>	<p>Use this to create a backup copy of your configuration outside the Analog Lab program. That way you will be able to re-import it if you accidentally delete it from the configuration list.</p> <p>The MIDI controller configs will be exported into the format "*.lab2midi" ("*" stands for the name you have given to the file).</p>
<b>Configuration list</b>	Once you have given a name to your new configuration it will appear in the drop-down menu under the Default configuration. You can now select it, export it or delete it from this list.

As you can see, it's easy to set up Analog Lab to work perfectly with whatever controller you are using. This means you'll be able to set up Analog Lab quickly for any situation, whether you will be recording or performing live.

## 5.4 Sound Mode

A preset contains the memorized settings of the various parameters that are necessary to reproduce a particular sound. The Sound mode page is where individual presets are located.

To access Sound mode, click the Sound button on the left side of the tool bar. This is what you'll see:



Sound mode screen

To load a preset, click on a name in the Preset list on the left side of the Sound mode screen as shown above.

Analog Lab is chock full of Factory presets: we've included over 5,000 of them! Searching through them all could be a daunting task, so in order to help you find the appropriate sound for a project more quickly, we've tagged the Presets in a number of ways. These 'tags' are identifiers such as "Type" and "Characteristics", and they allow you to filter your search results and zero in on the sound you want.

Said filters are available on the right side of the Sound Search menu under the name "Data Filters". Let's take a moment to look at each filter option.

### 5.4.1 Instruments



The Instruments filter

"Instruments" refers to one of the 9 instruments from which Analog Lab draws its sounds. The instruments include:

- ARP 2600 V
- CS-80 V
- Jupiter-8V
- Mini V
- Modular V
- Prophet V
- Prophet VS
- SEM V

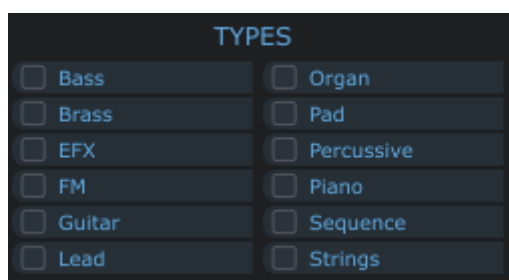


- Wurlitzer V

If you click on CS-80 V, for example, the Preset Manager will provide a list of presets drawn exclusively from the CS-80 V. But you can also choose to browse the presets for more than one Instrument at the same time. For example, by selecting both CS-80 V and ARP 2600 V in the “Instruments” frame, you’ll see a list of presets from only those two instruments.

When no instrument is selected for preset filtering, then the Manager will either automatically list all presets or list presets based on other filters.

### 5.4.2 Sound Types



*The Types filter*

“Types” refers to the kind of sound you might use for a particular purpose (bass lines, comping, etc.). Just as with the Instruments column, use the “Types” column to restrict the Preset list choices to one or more of the following:

- |              |         |            |           |
|--------------|---------|------------|-----------|
| • Bass       | • Brass | • EFX      | • FM      |
| • Guitar     | • Lead  | • Organ    | • Pad     |
| • Percussive | • Piano | • Sequence | • Strings |

As with the Instrument filter, one can choose one or more Types of presets. By selecting only BASS, the user will be given a list that contains only bass presets, and if one chooses BASS and STRINGS both Types will be provided.

The user may also search deeper by selecting and combining the different filters. For example, one may choose BASS, PAD, and STRINGS under the Type filter and MODULAR V and ARP 2600 V in the Instruments filter. The Preset Manager will then offer a list fulfilling only the above criteria.

### 5.4.3 Sound Characteristics



*The Characteristics filter*

Further refinement of your search is available through a third filter: "Characteristics". This allows you to choose presets according to sonic qualities such as:

- Acid
- Aggressive
- Ambient
- Bizarre
- Bright
- Complex
- Dark
- Digital
- Ensemble
- Funky
- Hard
- Long
- Noise
- Quiet
- Short
- Simple
- Soft
- Soundtrack

As with other criteria, these filters can be applied either individually or in any desired combination.

#### 5.4.4 Preset details

To the right of the Preset list is a window showing essential details about the selected Preset. You can edit any of the details from this window except the name of the preset; that operation is accomplished using the Save As procedure. (The Synth instrument type is fixed, of course.)



*Preset details*

An image of the instrument on which the preset is based is shown along with the following information:

<b>Name</b>	The name of the current preset (to rename, use Save As button)
<b>Synth</b>	The name of the virtual instrument
<b>LFO Sync</b>	Toggle MIDI sync of LFOs on or off
<b>Polyphony</b>	The number of available voices for the current preset
<b>Key Mode</b>	Choose Mono, Unison or Poly modes for the polyphony setting
<b>Seq/Arp Step Size</b>	Subdivide or multiply the note value of an active sequence or arpeggio, or adjust its speed if LFO Sync is not enabled
<b>Pitchbend Range</b>	Set the maximum limits of the pitch bend wheel

*Note: If the preset for which you are adjusting the details is a Factory preset, you must save this preset as a User program in order to recall those changes later.*

#### 5.4.5 Editing a preset

One of the great features of Analog Lab is that it is possible for any of its presets to be opened and edited using the original Arturia soft-synth on which it was created, as long as you have purchased and installed a copy of that synthesizer on your computer.

That being the case, then clicking on the picture of that synthesizer inside the Preset details window will open the current preset inside that synth.

For instance, if you own a copy of CS-80 V you can open any of the CS-80 V presets you find by clicking on the CS-80 V picture:



CS-80 V picture

Next, the CS-80 V editing window will open:



An open CS-80 V preset being edited from within Analog Lab

After this you can edit the preset however you like with the CS-80 V controls and then save the edited preset as new User preset.

### 5.4.6 Organization

In addition to the search filters mentioned earlier, there are also viewing options within the Preset Manager that allow you to choose how the presets are listed.

The list of Presets always appears in a vertical column on the left side of the screen under **Preset Name**. When Analog Lab is first launched, the presets are listed in alphabetical order from A to Z. This can be reversed (Z to A) by clicking on the Preset Name column again.

However, if the user prefers, the presets can be re-ordered according to the categories found in the adjacent columns:

<b>TYPE</b>	This is the column to use if you're looking for a particular type of sound (Bass, Pad, Sequence, whatever). Click at the top of the Type column and the presets will be ordered according to an alphabetical listing of the Type characteristics.
<b>INSTRUMENT</b>	If you're looking for a sound made by a particular Arturia instrument such as Prophet VS or Wurlitzer V, click on the Instrument column and the presets will reorganize based on the alphabetical order of the Instrument column.
<b>FAVORITES</b>	Allows you to indicate that certain presets are your 'go-to' choices when you start a new project. Simply click the Favorites column and they will be placed at the top of the Preset list (or at the bottom, if you click it again).
<b>RATING</b>	Indicate your likes and dislikes for each preset, or simply use this as another way to categorize them (set lists / projects / bands 1-5, etc.)
<b>DESIGNER</b>	If a particular sound knocks your socks off, you may want to spend some time focusing on what else that sound designer has created. Clicking on the Designer column allows you to do this.
<b>FACTORY</b>	Two choices: Factory or User. The status of the dots is fixed: a white dot means 'Factory preset' and a blank dot means 'User preset.' Toggle this column to change which sort is placed at the top.

## 5.5 Multi Mode

Sound mode is phenomenal, because our synth models and sound designers are absolutely top-notch. But Multi mode is where Analog Lab really starts to shine. It allows you to take two Sounds and combine them in a layer or split them across your controller keyboard for simultaneous playability. You also have the ability to position each Sound where you want it in the stereo field, adjust their relative levels, and transpose either one for an even more impressive sound.

We've also added quite a bit of flexibility in the ability to enable or disable various MIDI controls for each Sound independently.

But Multi mode is much, much more than just adding two Sounds together! You can also add independent effects to each Sound such as delay, flanger, reverb, bit reduction, compressor, and distortion, to name a few. We've provided a huge variety of ultra-high

quality digital effects that will take your combined synthesizer programs and make them positively *formidable*.

And of course you can open the editing panel for any Arturia plug-in synth you have installed and authorized, so it is possible to adjust any parameter of either Sound and dial in the exact combination you're looking for.

We've included hundreds of Multis already so you can get a feel for what's possible. When you're ready to learn more about what a Multi can do, please read on.

### 5.5.1 Multi Mode: an introduction



*The Multi mode screen*

The Multi window pictured above displays the following features (you may need to toggle the KEYB button and scroll down to see them all):

- The Multi preset list, with familiar category columns such as Name, Favorite, Rating, Designer, Genre, and Factory/User
- The Sound tab, where Sounds may be selected for inclusion in the Multi
- The Preset details window, with the Multi name, Genre and Creator easily seen
- 2 Sounds of any type, with controls for Level, Pan, and FX send levels and routing options. If you own one or both synths you can click on their icons to open them for editing
- The MIDI and Split window, which shows where each Sound resides on the keyboard so you'll know at a glance whether they've been split or layered. You can also set their key ranges, MIDI Channels, and transposition in this window



- FX Sends A and B: When an effect is selected from the pull-down menus the parameter knobs for that effect will be revealed, allowing you to edit the effect
- The Control Assign window, where the various MIDI controllers can be enabled or disabled for each Sound
- The Master section, with FX Return controls for FX sends A and B and a duplicated Master Volume control

As you can see, there are a lot of possibilities. We'll cover each one thoroughly in this chapter.

### 5.5.2 Sorting the Multis

Right off the bat Analog Lab provides lots of great Multis to get you started. And just like with the Sounds, we've pre-marked them in a couple of ways to help you locate what you're looking for more quickly.

You'll notice across the top of the Preset list that there are different labels for each column, such as "Preset Name", "Favorite", etc. If you click at the top of one of those columns the entire list of Multis will be organized alphabetically (A-Z) within that category. If you click the column heading a second time the order will be reversed (Z-A).



Here's a description of the category headings:

<b>Preset Name</b>	The names of the Multis. This is the default sort order.
<b>Favorite</b>	By clicking the dot in this column, the corresponding Multi becomes a Favorite and will appear at the top of the column when you click on the Favorite column (or at the bottom if you click a second time).
<b>Rating</b>	Use these dots to indicate which Multis inspire you the most, or even to set them up as additional categories (5 dots = crowd goes wild, or whatever you want to remember!)
<b>Designer</b>	The name of the Creator of the Multi is another category. You can enter your name as the sound designer when you use the Save As function.
<b>Genre</b>	This label helps you organize your Multis according to the musical style for which they are best suited.
<b>Factory</b>	When the dot is solid that means the Multi is a Factory preset. When it is a circle then that's a User Multi. After you save a Multi or two of your own you'll be able to use this category to put your Multis at the top of the list if you prefer.

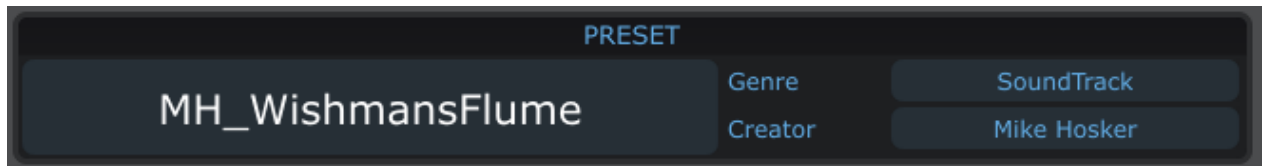
### 5.5.3 Selecting a Multi

No surprises here: To select a Multi you can click on one in the Preset list and then use the up/down navigation buttons on your computer keyboard to select an adjacent one. You can scroll down the list with using the vertical blue oval at the rightmost edge of the Preset list window, and then click on one that looks interesting.

Note: Multis can take a little longer to load than a Sound, since one Multi needs to load two Sounds and a couple of effects as well.

### 5.5.4 Multi mode: Preset details

The upper right-hand area of the Multi mode window is the section known as the Preset details window. It shows you three things: the name of the Multi, its Genre classification, and the name of the sound designer who created it.

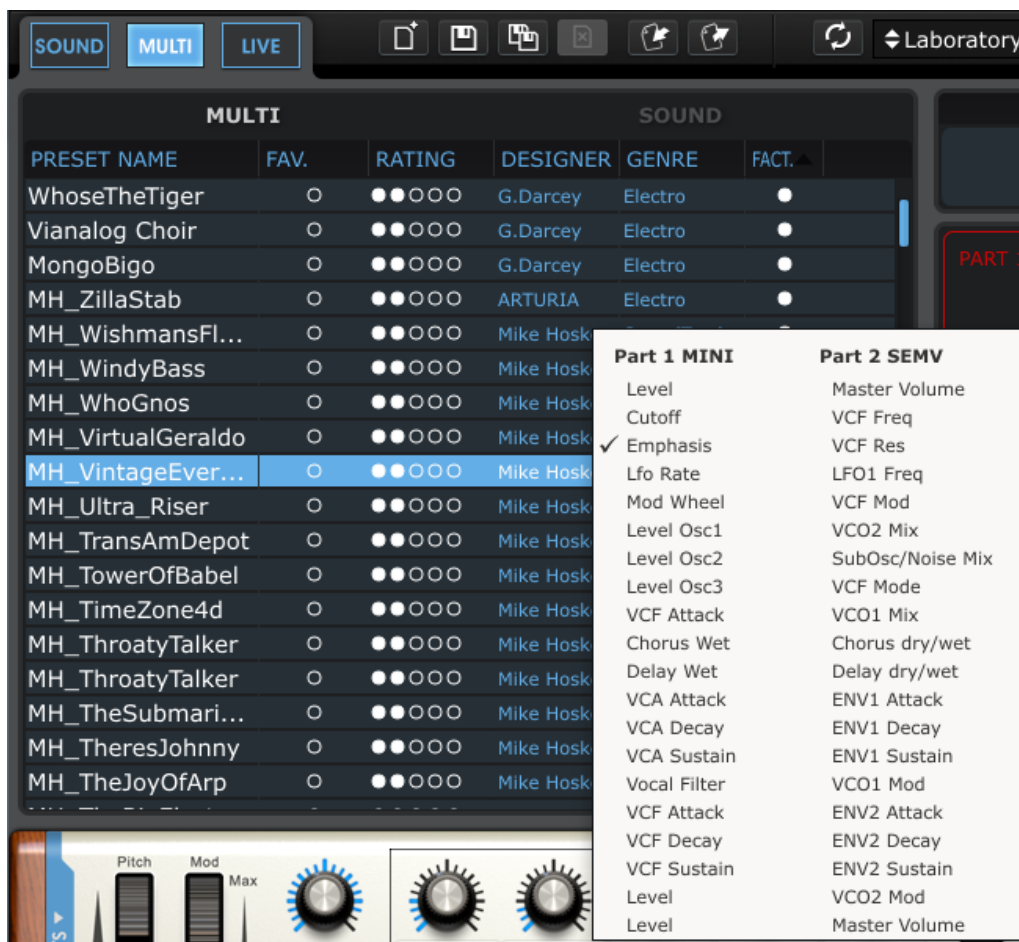


The Preset details section of the Multi mode window

### 5.5.5 Parameter control assignments per Part

As with Sound mode, every control the virtual keyboard offers can be assigned to one of the Sound parameters. But in Multi mode two are Sounds active, so we've added the ability to select a parameter from either Sound and assign it to each control.

The process is the same as with Sound mode: click the arrow next to a control and its menu will open...only now it is twice as wide, because there are twice as many parameters available.





## 5.5.6 Editing a Sound Preset within Multi mode

The list pictured above shows roughly 20 parameters for each plug-in which you have at your disposal whether you 'own' the plug-in or not. And as with Sound mode, you will have access to all of the parameters of a given Arturia plug-in if the full version of that plug-in has been authorized for use on your computer.

When that is the case, as the cursor hovers over the plug-in picture inside the Part window it will become "illuminated" like the one at the top of the picture below:



*The top plug-in can be edited*

Double-clicking on the picture for an authorized plug-in will open the full version in all its glory, allowing unfettered access to every parameter.

## 5.5.7 Editing a Multi

### 5.5.7.1 Changing the Sound assigned to the Part

So far we've mostly focused on the higher-level functions of selecting and sorting Multis. But you may have noticed that above the Preset list and the various sorting categories that the word "Sound" is visible beneath the "Connect" button. This is known as the Sound tab. If you click on the Sound tab the entire list of Sounds from Sound mode becomes visible. This is how individual Sounds are selected for placement inside a Multi.

*Note: You can sort the Sound preset list inside the Sound tab of Multi mode by clicking on the columns just as you would in Sound mode.*

Select a Sound from the Sound tab preset list and drag it over to the Part 1 Sound name window and drop it there. That Sound will now be located inside the Multi as Part 1.

Repeat this process to drag and drop a Sound onto Part 2 and now the Multi is fully loaded with new Sounds and ready for further editing.

### 5.5.7.2 Part parameters: Level, Pan and FX

Looking at the screen shot below, let's go left-to-right through the basic parameters that are available for a Part within a Multi. Remember that each of these parameters is available for both Part 1 and Part 2:

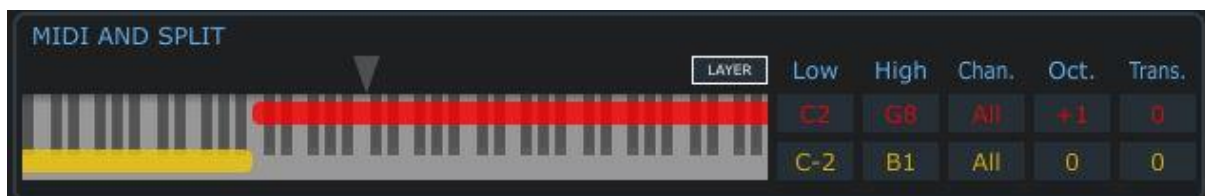


- **Level:** Adjusts the volume of one Part without affecting the other Part
- **Pan:** Changes the position of the Part in the stereo field
- **FX Send A:** Mix: Adjusts the input level of the Part into FX Send A  
Pre / Post: Switches the FX Send from pre-fader to post-fader
- **FX Send B:** Mix: Adjusts the input level of the Part into FX Send B  
Pre / Post: Switches the FX Send from pre-fader to post-fader

*Note: there's a red line surrounding the Part 1 parameters and a yellow line surrounding the Part 2 parameters. This color-coding scheme is used whenever possible in Multi mode to help you know at a glance which Part you are editing.*

### 5.5.7.3 Part parameters: MIDI and Split

Below the Part 2 parameters is the section that allows you to set certain MIDI parameters for each Part. As with the lines around the Part windows, red graphics and text represent Part 1 parameters while the yellow graphics and text represent Part 2 parameters.

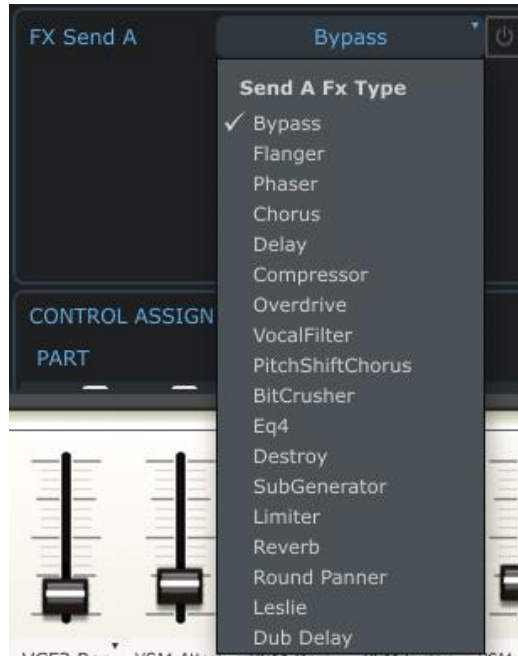


Let's go left-to-right again as we describe the parameters in the picture above. Keep in mind the parameters are the same for Parts 1 and 2:

- **Layer:** To reset the split points of the Parts so they're both full range, click the Layer button above the highest keys of the MIDI and Split keyboard graphic. The red and yellow bar graphics will expand to the full length of the keyboard graphic.
- **Low/High:** Click one of these fields and drag its value higher or lower to set the MIDI note range of the Part. You'll see the red or yellow bar graphics change inside the MIDI and Split keyboard graphic as the values change.
- **Chan:** Each Part can have its own MIDI Channel setting. The default value is ALL.
- **Oct:** Each Part can be transposed in octave increments up or down 4 octaves.
- **Trans:** Use this parameter for chromatic transposition of a Part. The range of transposition is +/-24 semitones (+/-2 octaves).

#### 5.5.7.4 Multi parameters: FX Sends A and -B

Analog Lab has two independent signal processors available for additional audio sculpting of your Multi. The list of available effect types is rather extensive, and the full list is available for both FX Sends. To view the options, click the arrow next to the word Bypass and the menu will drop down, revealing the contents:



The FX Type list

Scroll down to the desired effect and click; you've just assigned an effect to the FX Send.

To enable the effect, click the on/off button to the right of the name of the effect:



With the effect enabled, now you can adjust the various parameters of the effect. Just remember to boost the 'Mix' parameter for that FX Send so the effect is receiving signal; you'll find that control near the Part's synth picture.

#### 5.5.7.5 Multi parameters: Control Assign

Layered Multis are basically "One Really Big Sound", so you'll probably want them to respond the same when you use the Pitch bend or the sustain pedal, etc.

But in other cases, such as when there's a bass sound on the left side and a piano sound on the right, you may want to split the controls so the Pitch bend and Modulation controls are assigned to the bass while the sustain pedal controls the piano.

The picture below illustrates one such configuration:

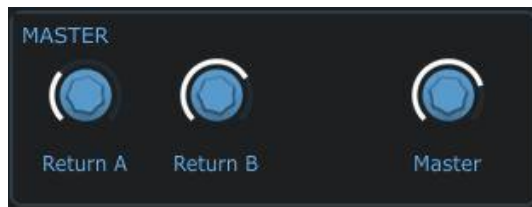


In this case the pedals and aftertouch control have been reserved for Part 1, and the Pitch bend and Modulation have been assigned to Part 2.

To change these settings, click on one of the boxes. A white box means the control has been enabled; an outlined box means the control has been disabled.

#### 5.5.7.6 Multi Parameters: FX Returns A and -B

These knobs allow you to adjust the output levels of each FX Send. Click one and move it; you'll see the values change. These parameter values are stored with the Multi.



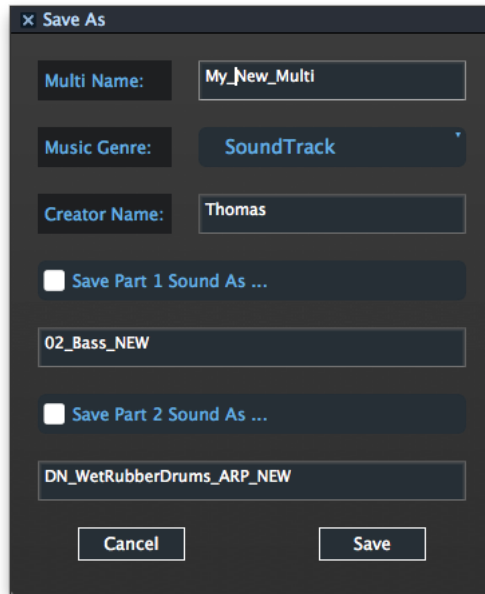
#### 5.5.7.7 Global parameter: Master Volume

You may have noticed in the picture above that grouped with the Master Return A and Return B controls is another knob labeled Master. This parameter is linked to the Master Volume control next to the Pitch bend and Mod controls; when you move the one control the other will move as well. It has been placed inside the Multi's Master section for convenience so you won't have to move the cursor over to the left side of the virtual controller while adjusting the output of the Multi.

However, the value you select here is not stored with the Multi; any adjustment to the Master Volume parameter will affect all Multis and Sounds equally (i.e., the entire output of Analog Lab).

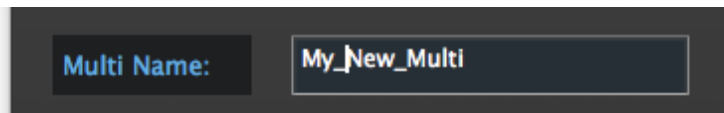
### 5.5.8 Saving your edited Multi

If you modify a 'Factory' Multi, the save button is not enabled so that you will not write over the existing multi. To save a modified multi, click 'Save As' and the following screen shows up. If you modify a 'User' Multi, then the 'Save' button is enabled and you can save your changes.



### 5.5.8.1 Name

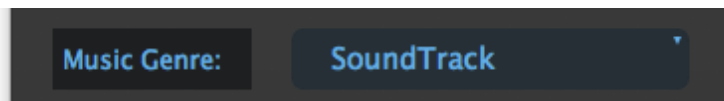
Modify the name of your Multi.



### 5.5.8.2 Genre

The Genre label allows you to flag a Multi as a good one to use for a particular style of music. When you are saving a Multi you will see a field called 'Music Genre'; click in the list to the right of that and a drop-down menu will show you the following Genre choices:

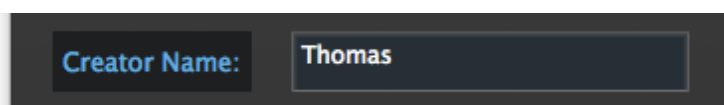
- Electro
- Latin
- Soundtrack
- Urban
- Funk
- World
- Pop
- Jazz
- Dub-Reggae
- Rock
- Classical
- None



Select one Genre for your User Multi and then continue with the Save process.

### 5.5.8.3 Creator

Once you've entered the details for the Multi, click the Save button. If you decide you want exit to make more changes to the Multi parameters first, click Cancel.

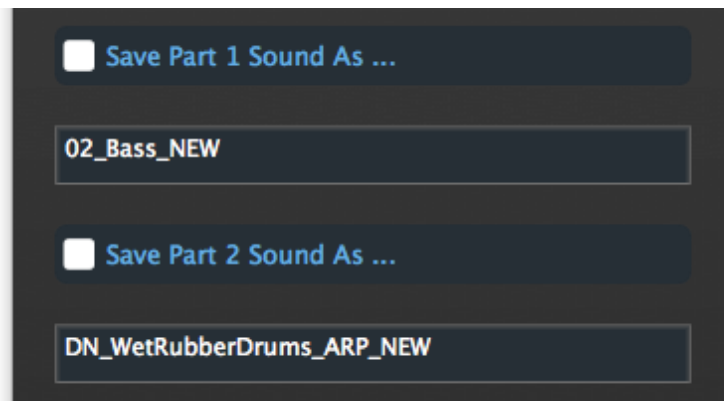


#### 5.5.8.4 Save sounds

The sounds provided with Analog Lab are 'Factory' thus cannot be modified. If you modified the sounds of a 'Factory' Multi that you want to save, then you must create new sounds. They will then be listed in Sound Mode.

To save the Sound of the Part 1, check the 'Save Part 1 Sound As ...' checkbox and edit its new name. To save the Sound of the Part 2, check the 'Save Part 2 Sound As ...' and edit its name.

If the check boxes are unchecked, the 'Factory' Sounds will be used instead.



#### 5.6.1 Start a Multi from Scratch

Sometimes building something from the ground up is the best way to learn how it works. So if you'd like to start your own Multi, click the 'New' button in the tool bar:



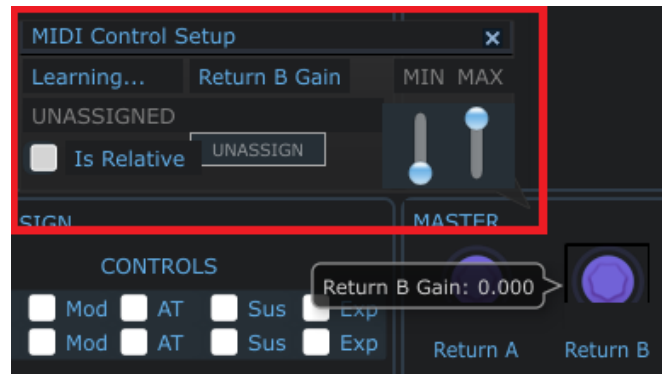
Follow the twists and turns that you encounter as you experiment! What you end up with will be uniquely suited to your curiosity.

*Note: the 'New' button is only active in Multi mode.*

#### 5.6.2 MIDI control of Multi mode parameters

If there are particular controls on an external USB MIDI controller that you would like to assign to one of the virtual controls inside Multi mode, that is entirely possible. Just click the MIDI button in the tool bar and they'll become another color, indicating that they are waiting for you to make a selection.

Press Control on your computer keyboard and click on the virtual control you wish to link to a particular control on your controller keyboard. A window similar to this one will open (for a full description of its parameters, see section 0):



Now activate the control on your controller keyboard and move it through its full range. You will see its identifying MIDI information captured by the MIDI Control Setup window. Once you have established this connection you can move on to the next pair of controls or exit MIDI Control Setup mode by clicking the MIDI button in the tool bar again.

*Note that the knobs and sliders in the Controls section of the virtual keyboard have also entered MIDI assignment mode. These controls are shared among all three modes, so be mindful that a change made to the MIDI assignments of these controls will be effective in Sound and Live modes as well.*

Be sure to save your entire MIDI configuration once you have set up the controllers the way you want them. To learn more about this, see section 5.3.5.

## 5.7 Live mode

Analog Lab allows you to assign a series of Sounds and/or Multis to particular MIDI program change numbers so a MIDI controller keyboard or a host application such as a DAW can select them easily.

To enter Live mode, locate and click its button in the tool bar:



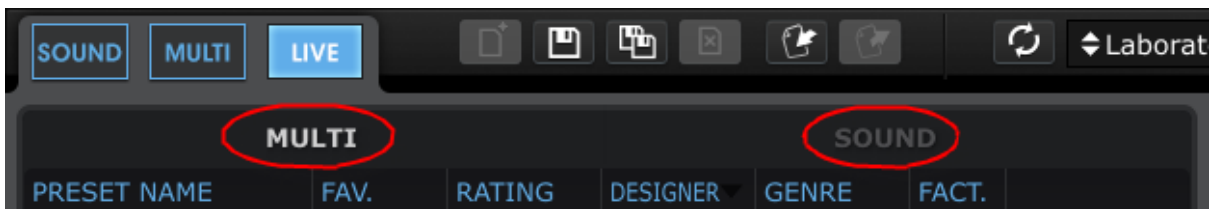
*Live mode selected*

There are three main areas in the Live mode screen: the Preset selection window, the Preset/Song details window, and the Program Map.

- **Preset selection:** Select a Multi or Sound from their respective Preset lists and drop them into the Program Map.
- **Preset/Song details:** View details about the current Multi or Sound and enter the name of an associated Song.
- **Program Map:** This is the main focus of Live mode. Drag and drop Multis and Sounds to the Program Map in the desired order so they can be called up using MIDI Program Change numbers.

### 5.7.1 Selecting a Preset for the Program Map

First decide whether you want to place a Multi or a Sound into Program Map by selecting one or the other category at the top of the Preset list:



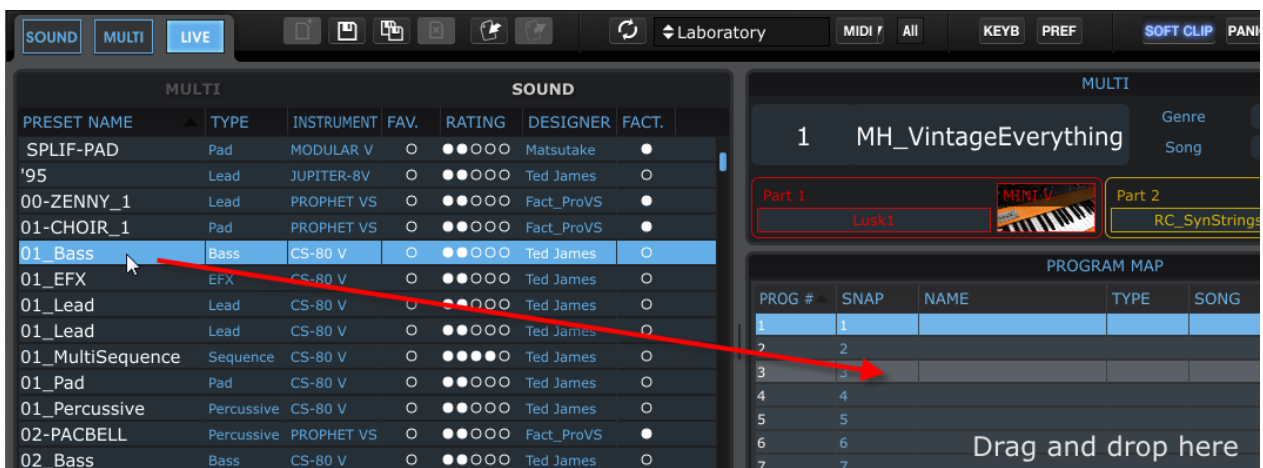
The Program Map in Live mode can use either Multis or Sounds

We'll select a Sound first, so click on the Sound tab to view the Sound mode Preset list.

The view on the left side of the window should be familiar: it looks exactly like Sound Mode. The Data Filters window is not available, but it is possible to sort the Preset list by clicking on the category columns (Preset Name, Type, etc.) as you would in Sound mode.

So for example, if you know the User program you are looking for was created using the CS-80 V plugin, you might want to click on the Instrument category and then scroll through the list until you reach the group of CS-80 V programs. You should be able to find the User program fairly quickly after that.

Once you've found the Sound you want, click on its name and drag it over to the Program Map window on the right side of the Live mode screen:



This action has placed Synchro\_Bass at the top of the Program Map. Now when you want to select that Sound from an external MIDI source or a DAW, just make sure Analog Lab is in Live mode and send it MIDI Program Change #1. Synchro\_Bass will be selected.

To add another item to Program Map slot #2, either drag another Sound from the Sound list or switch into the Multi category in the Preset Selection window and select a Multi. You can sort the Multi window according to its categories, also.

Once you've located the right Multi, drag it over to the second slot in the Program Map list and drop it. MIDI Program Change #2 will select that item, and so on.

There are 128 MIDI program change numbers, so the Program Map has 128 slots for you to fill with your Sounds and Multis.

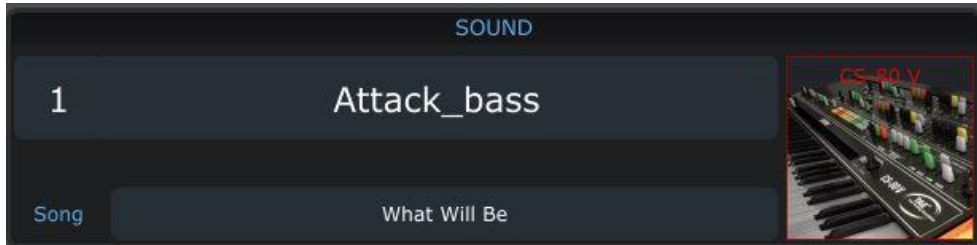
*Remember: When switching from one type to the next, Multis can take a little longer to load than a Sound. This is because each Multi consists of two Sounds and various effects settings as well.*



## 5.7.2 The Preset / Song Details window

When a Sound or Multi is selected from the Program Map there are certain helpful details that will be displayed in the Preset / Song Details window. The amount of information that is shown will change slightly depending on whether a Multi or Sound is the current program.

### 5.7.2.1 Sound details



This shows the name of the Sound, a picture of the plugin instrument used to create it, and the title of the Song for which the Sound will be used. To enter a Song name, just click in the field and start typing.

### 5.7.2.2 Multi details



Here we see the name of the Multi and its musical Genre, the title of the Song for which the Multi will be used, the names of the Sounds used in each Part, and pictures of the plugin instruments used to create them.

To enter a Song name, just click in the field and start typing.

*Keep in mind that you can re-use a Sound or a Multi and give it a different Song name; just drag it from the Preset list again and drop it on a different Program Map location.*

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