USER'S MANUAL

Thank you for purchasing the ARTURIA's HIPHOP PRODUCER!

In this package you will find:

- One DVD-ROM containing a unique installation program
- One Registration Card (credit card format) holding license numbers and activation codes
- One 68-page paper user's manual in English

In order to obtain:

- **the activation code to authorize Analog Factory HipHop Edition**
- **the serial number to authorize Live Lite 8**
- **the serial number to authorize Lounge Lizard**

➔ You need to register your HipHop Producer pack at http://www.arturia.com/login

All technical assistance shall be handled by the concerned software proper editor. Arturia does not take any responsibility in third-parties software technical issues handling.

This user's manual has been designed and realized by Fabien BRASSELY and Antoine BACK.

4, chemin de Malacher
38240 Meylan
FRANCE
http://www.arturia.com

TABLE OF CONTENTS

1. HipHop Producer Installation

To install the HipHop Producer you just have to follow the instructions on the screen.

First, insert the disk in your DVD drive.

On **Windows**, launch the "LauncherHipHop.exe" file:

On **Mac OS X**, double-click on "LauncherHipHop.app":

Welcome to the HipHop Producer installer home screen:

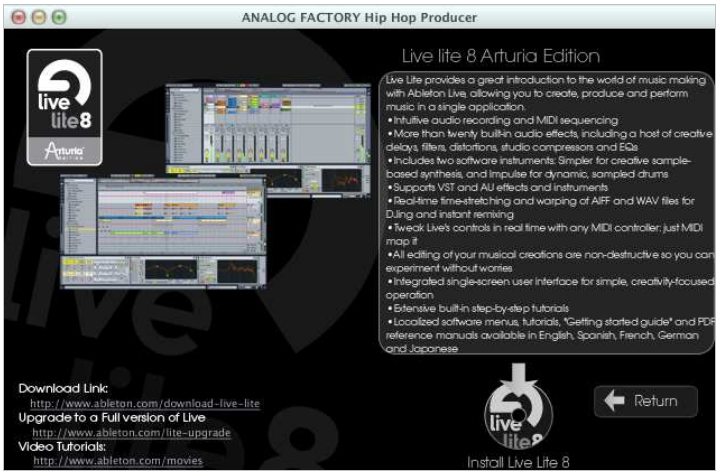
Click on the software icon you want to install.

For a **full install**, and in order to prevent any incompatibility or bad plug-ins recognition, please follow the suggested installation order:

1. Live Lite 8
2. Analog Factory HipHop Edition
3. Lounge Lizard Session
4. ModernBeats HipHop

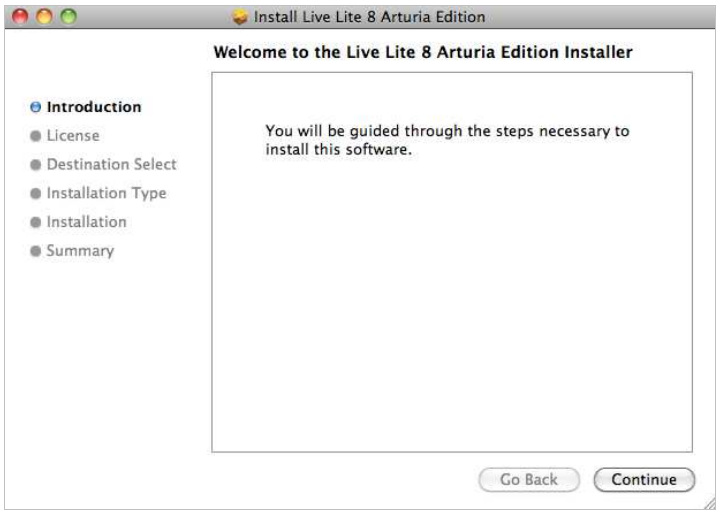
1.1. Install Ableton Live Lite 8 Arturia Edition

Click on the "Install Live Lite 8" icon to begin the installation:

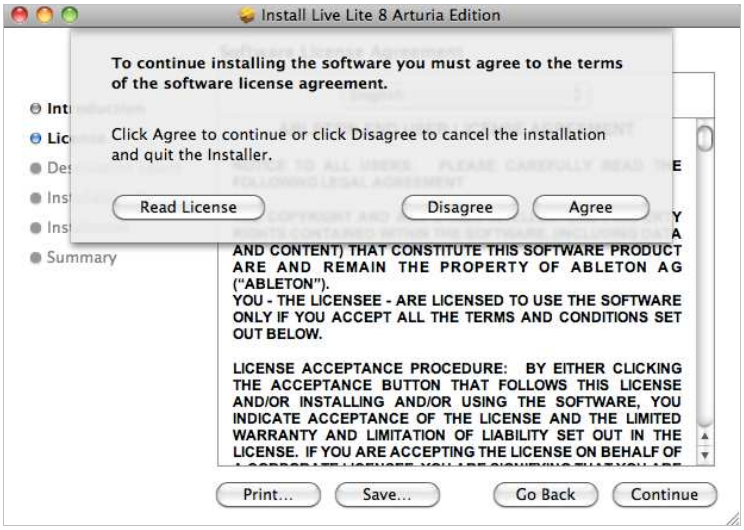


1.1.1. Mac OS X

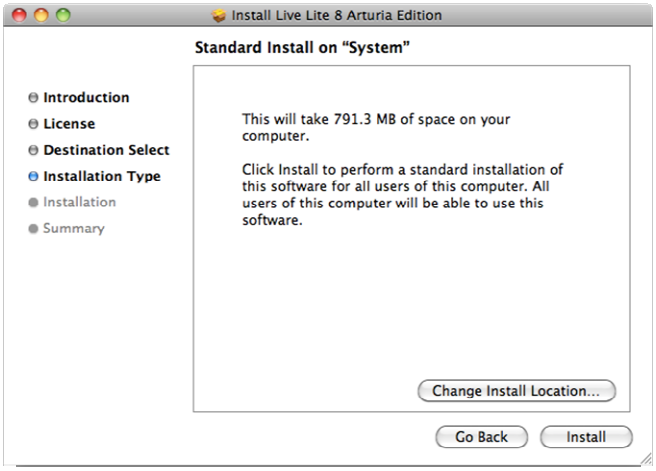
Click "Continue":



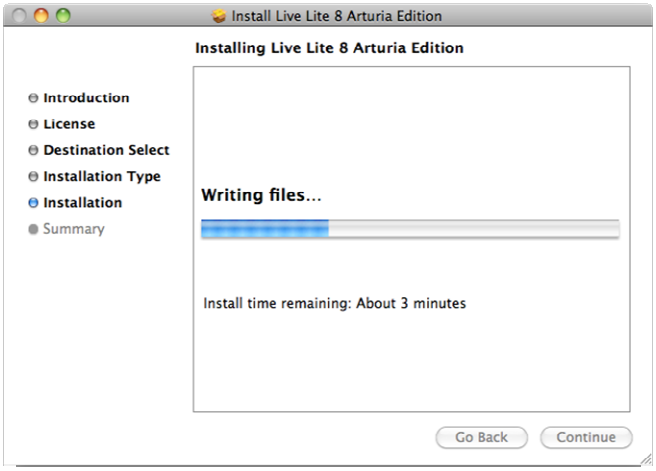
Once you have read and approved the Ableton EULA, click on "Agree" to continue the installation:

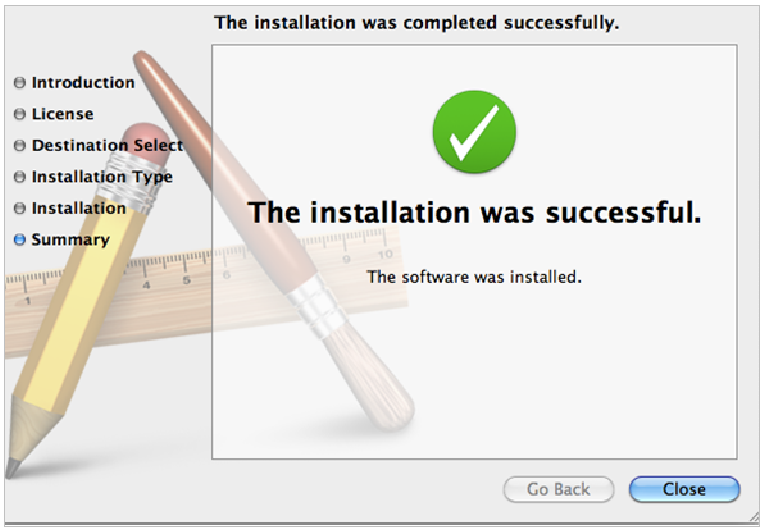


Then click on "Install" to start copying the files on your hard drive:



Wait until the installation is complete:





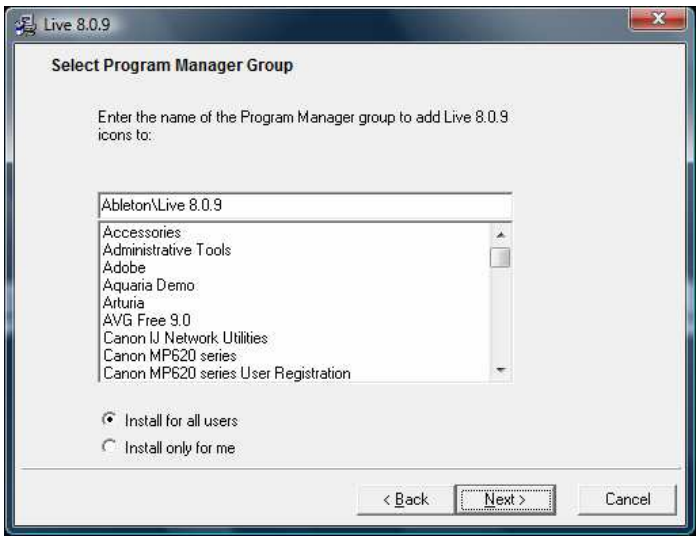
Live Lite 8 Arturia Edition is now installed.

1.1.2. Windows

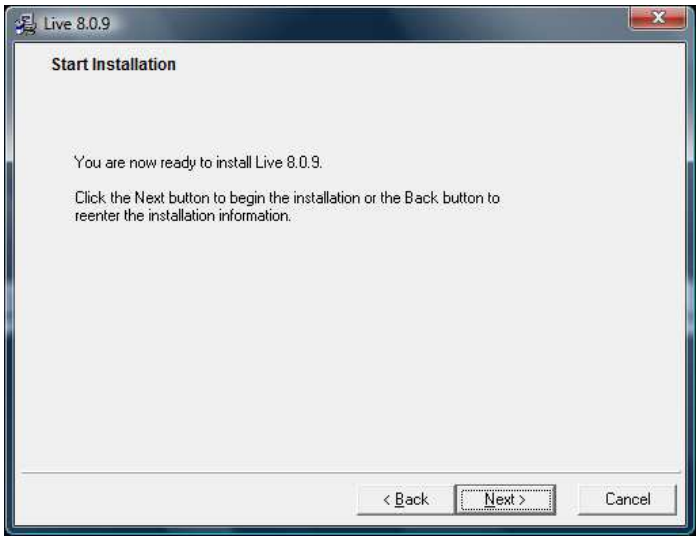
Click "Next":

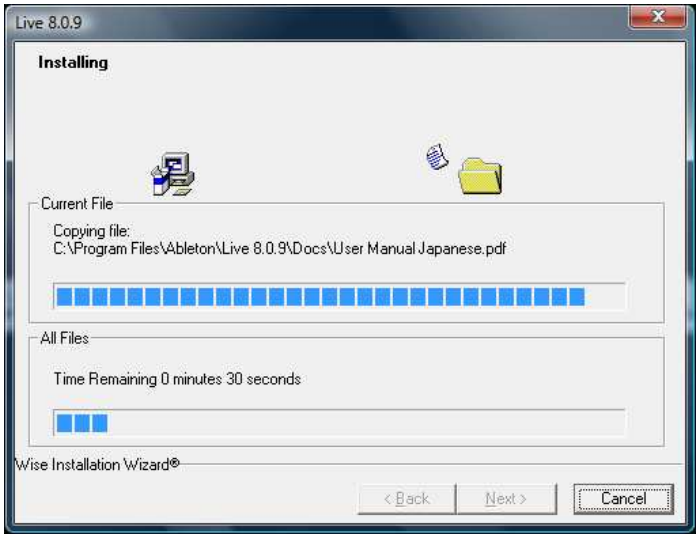
Once you have read and approved the Ableton EULA, click on "I Agree" to continue the installation:

Select the installation folder and click on “Next”:



Click on “Next” to start copying the files on your computer:



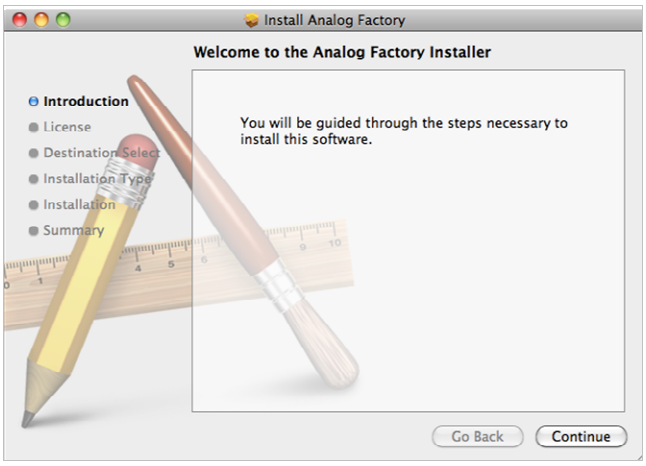


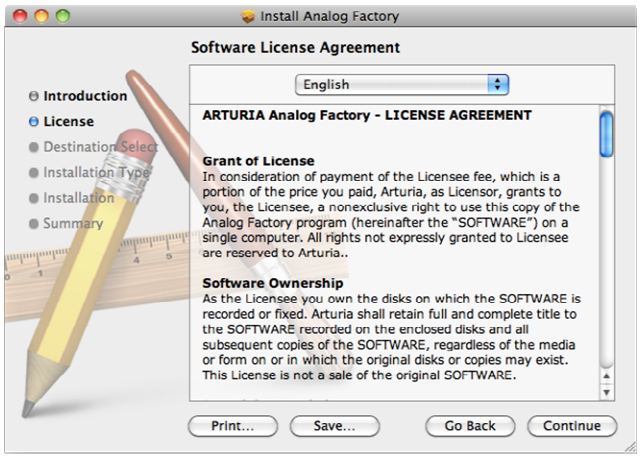
Ableton Live Lite 8 is now installed.

1.2. Install Arturia Analog Factory HipHop Edition

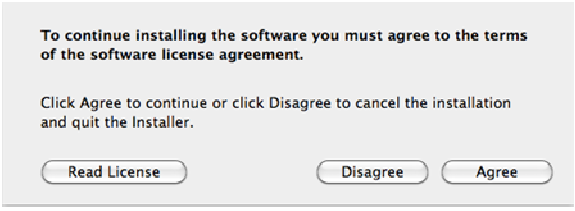
1.2.1. Mac OS X

Click "Continue":

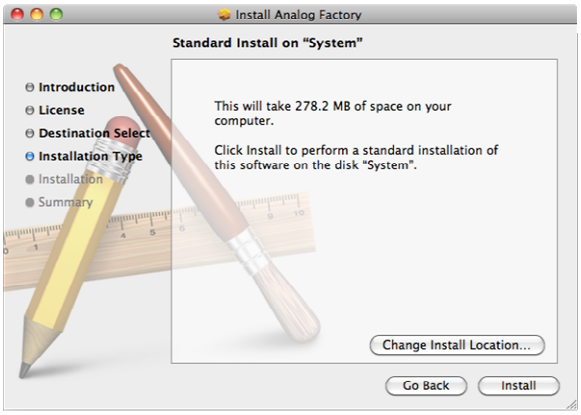


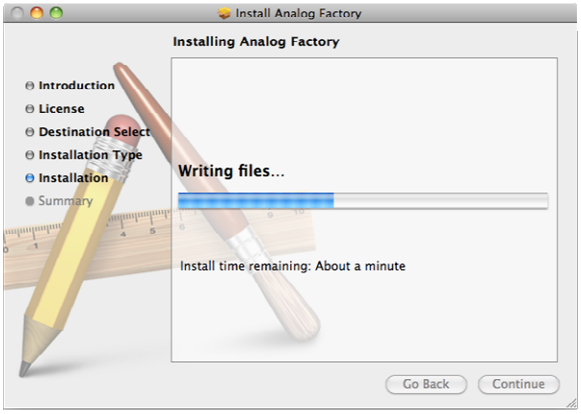


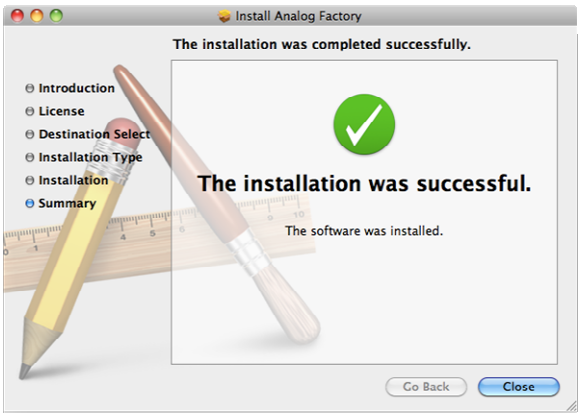
Once you have read and approved the Arturia EULA, press "Agree":



If you want to change the default installation folder, click "Change Install Location…", otherwise simply click "Install":



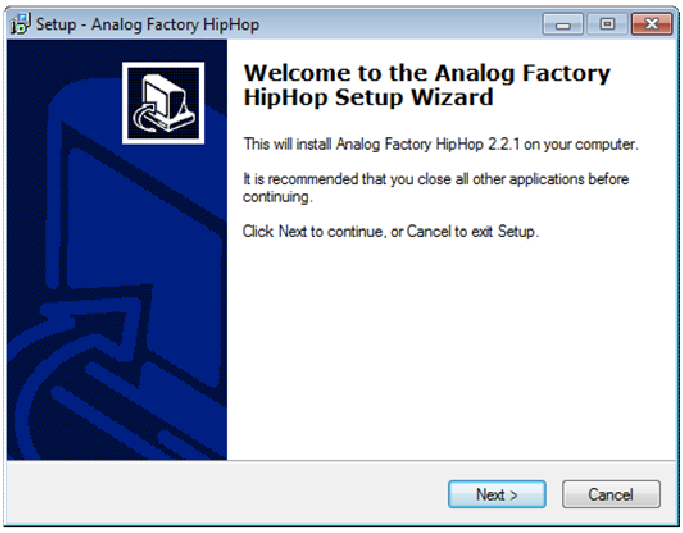




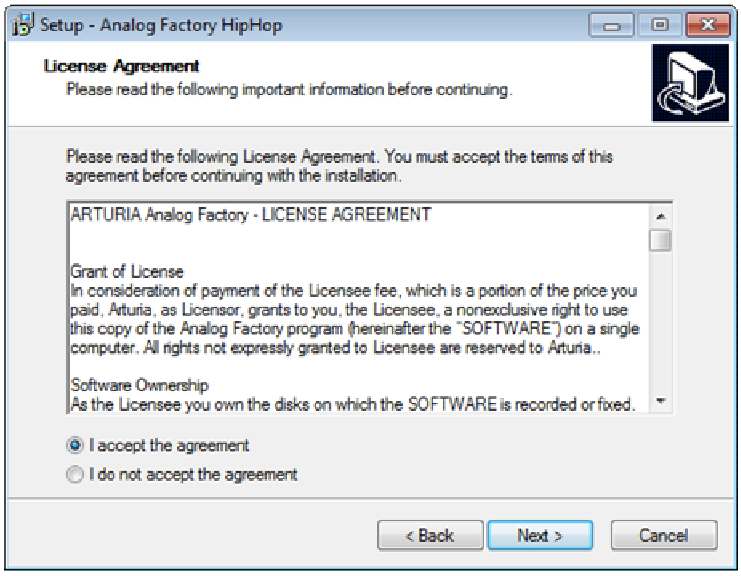
Analog Factory is now installed.

1.2.2. Windows

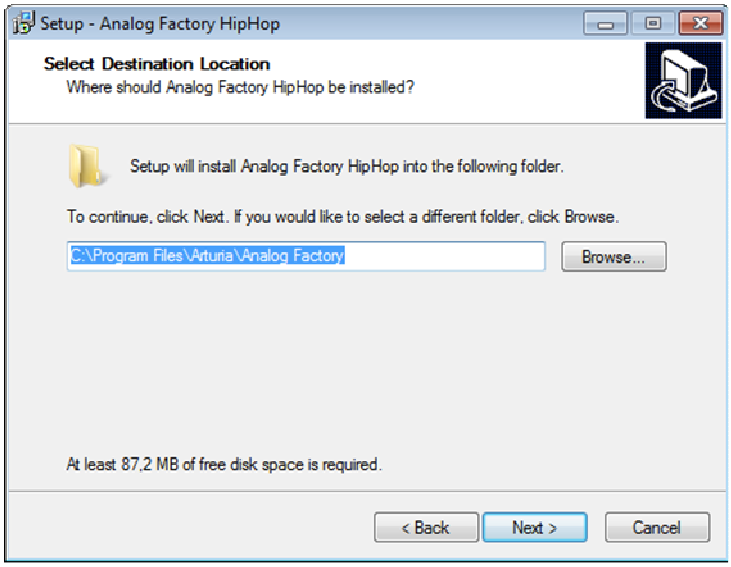
Click "Next" to continue:



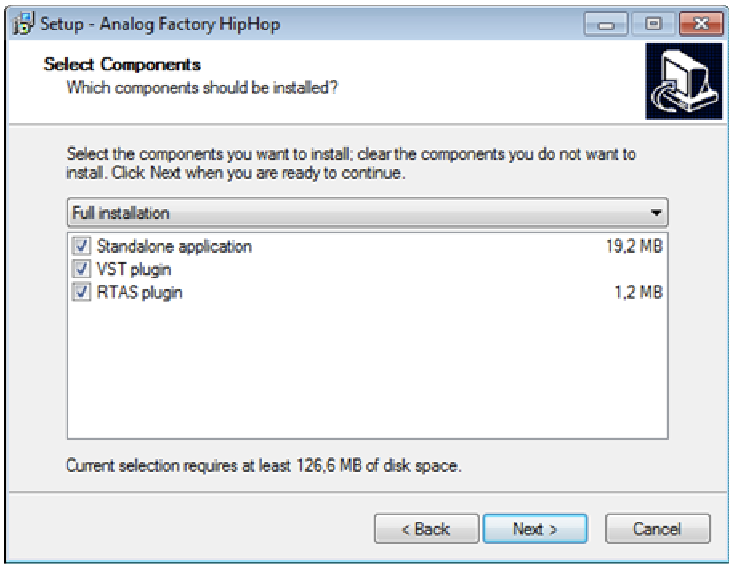
Once you have read and approved the Arturia EULA, select "I accept the agreement" and click "Next":



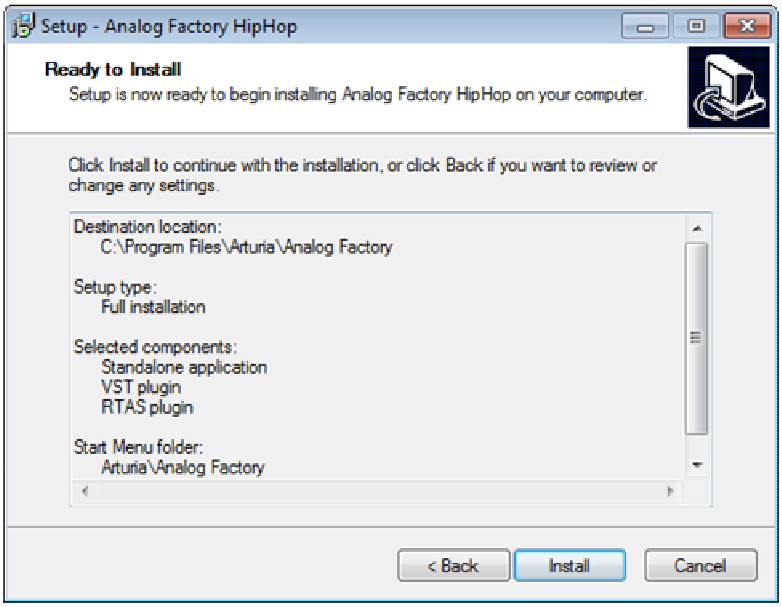
Accept or change the installation folder, then click on "Next":

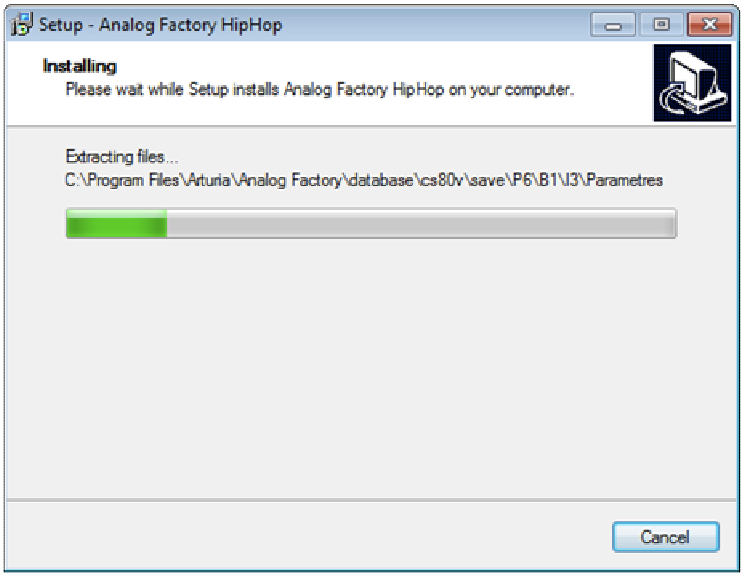


To avoid any compatibility issue, we recommend you to **install all the components**. So simply click on "Next":

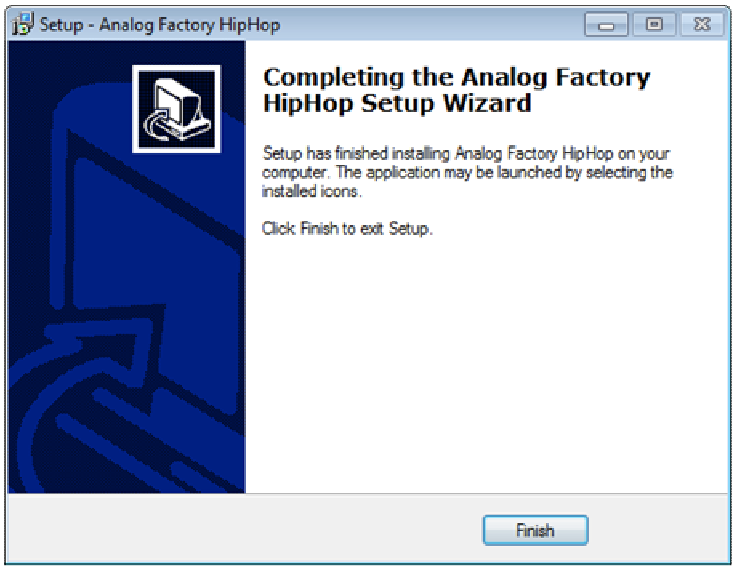


Click on “Install” to start copying the files on your computer:





Click on “Finish”:

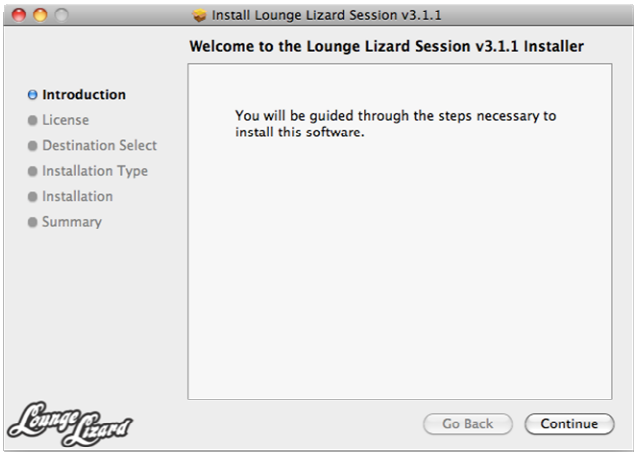


The Analog Factory HipHop Edition installation has now completed.

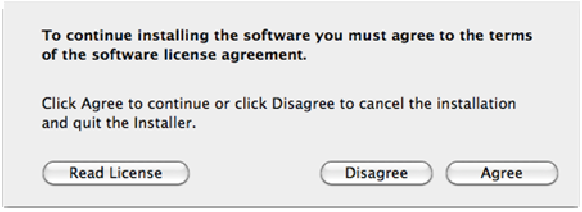
1.3. Install Lounge Lizard Session

1.3.1. Mac OS X

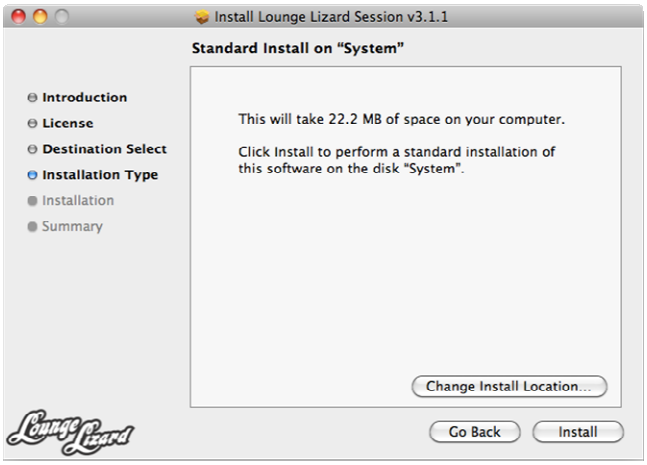
Click on "Continue":

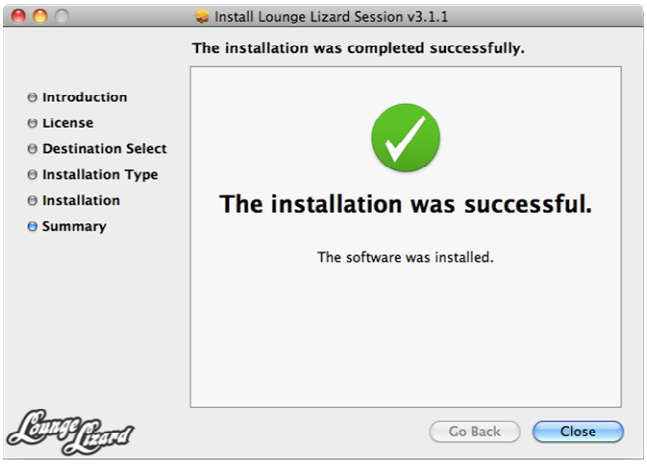


Once you have read and approved the license agreement, click "Agree":



Then click on “Install” to start copying the files on your computer:

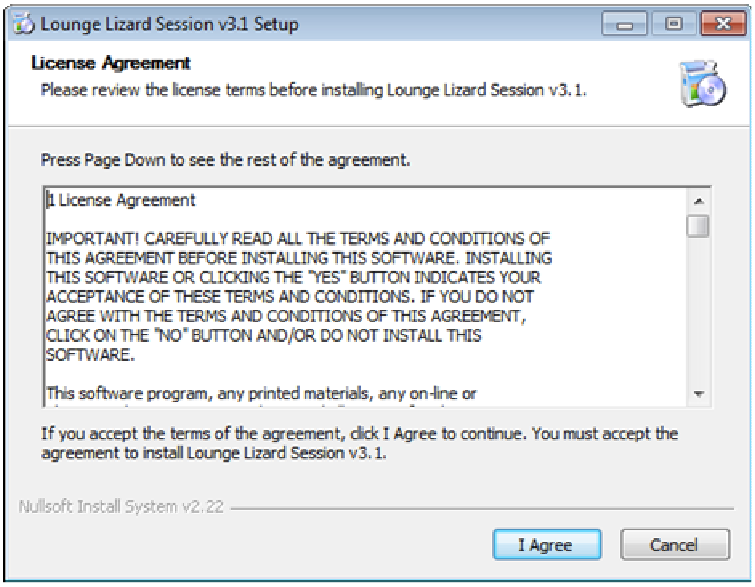




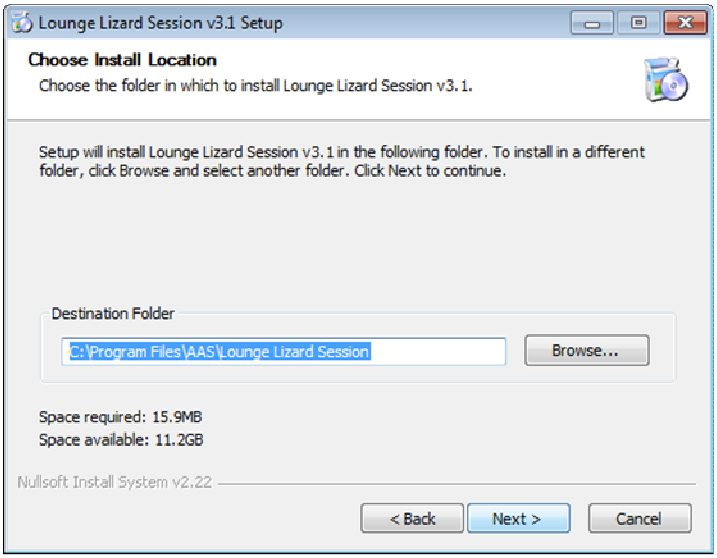
Lounge Lizard Session is now installed.

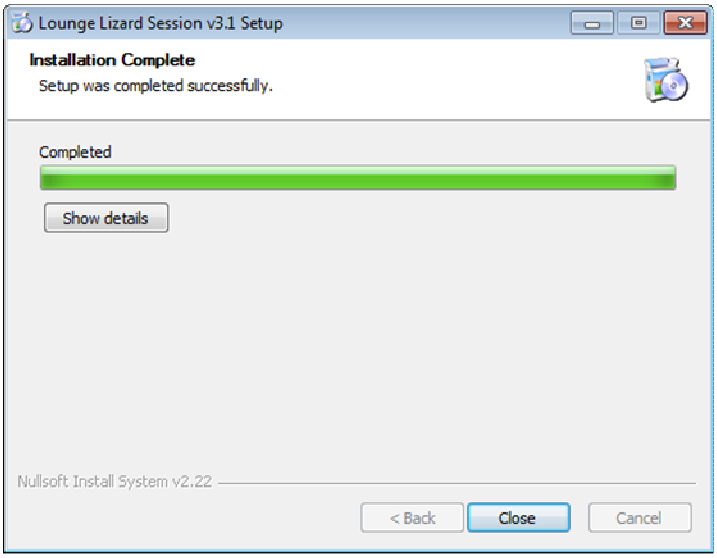
1.3.2. Windows

Once you have read and approved the license agreement, click “I Agree”:



Accept or modify the install folder, then click on "Next":

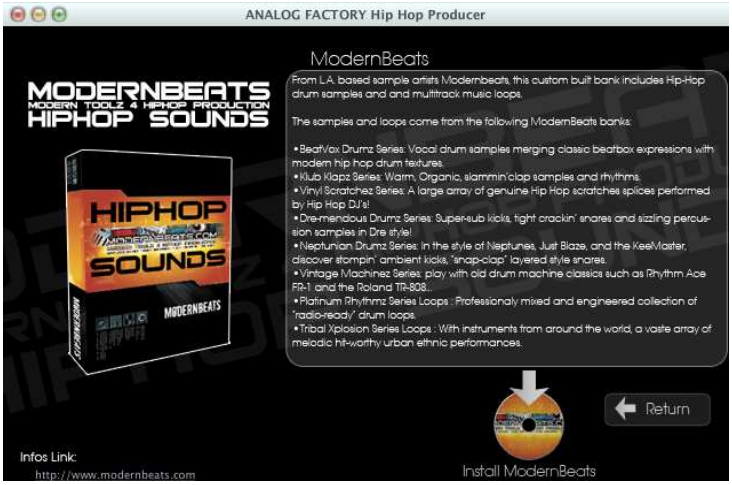




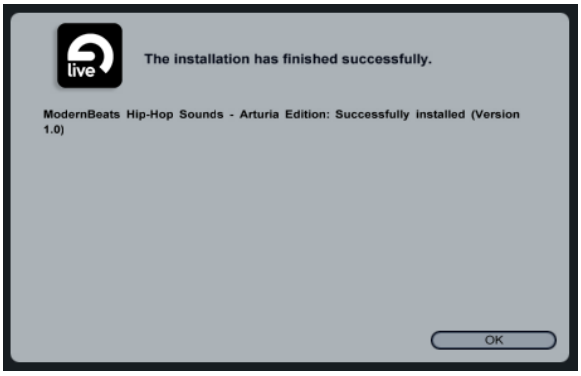
Lounge Lizard Session is now installed.

1.4. Install Modern Beats HipHop Sounds

In this Arturia edition, banks come as Ableton Drum Rack patches. Click on Modern Beats Icon to install the sound Banks:



Ableton Live Lite starts. Click on “Install”:



Now you can explore the sounds bank in the Live library:

1.5. Registration & Authorization

Once all your software pack is installed you have to register online as a licensed HipHop Producer user. This registration is necessary in order to obtain:

- the **activation code** to **authorize Analog Factory HipHop Edition**
- the **serial number** to **authorize Live Lite 8**
- the **serial number** to **authorize Lounge Lizard**

…as well as **direct access to the Arturia Technical Support**, reserved resources for new presets, and latest news on upcoming updates.

Make sure to keep this information in a secure place!

⚠ *The Arturia Technical Support Department handles the technical issues referring to the global installer and to the Analog Factory HipHop Edition only. For any other issue related to Live Lite, Lounge Lizard Session or Modernbeats HipHop Sounds, please refer to their respective editors:*

- *Ableton:* http://www.ableton.com/support
- *Applied Acoustics Systems:* http://www.applied-acoustics.com/support
- *Modernbeats :* http://www.modernbeats.com/contact

---

2. Ableton Live Lite 8

Welcome to Ableton Live Lite

This Getting Started Guide will teach you how to install Live Lite and set up your audio and MIDI hardware. You'll also learn a bit about how Live works and how to get more information.

2.1. Installing Ableton Live Lite

Find the Live Lite installer on the CD or DVD supplied with your hardware and double-click to install it.

2.1.1. Mac OS X

To launch Live, locate and open the Live application folder and double-click the Live icon.

2.1.2. Windows

To launch Live, select it from the Start menu.

2.2. Authorizing

The first time you launch Live Lite, you will be presented with a dialog window containing instructions for authorizing. If you have an internet connection on the computer on which you're installing Live, you can authorize online. Otherwise, you can authorize on another machine with an internet connection.

For more information or help with authorization, see:

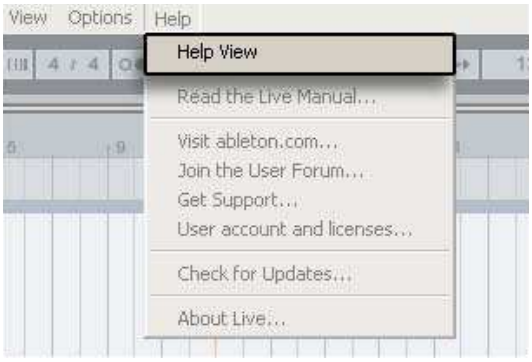
http://www.ableton.com/authorization-live8

You will need to enter a serial number in order to authorize Live Lite. Your serial number can be found in your Arturia account once registered the HipHop Producer pack (see Chapter 1.5).

2.3. Setting up Hardware

Before you can use your MIDI or audio device, you may first need to install drivers. Consult the documentation that came with your hardware for more information. Once you're sure your hardware is attached and working properly, you'll need to configure Live to use it. Audio hardware is set up in the Audio tab of Live's Preferences window, while MIDI hardware is set up in the MIDI/Sync tab.

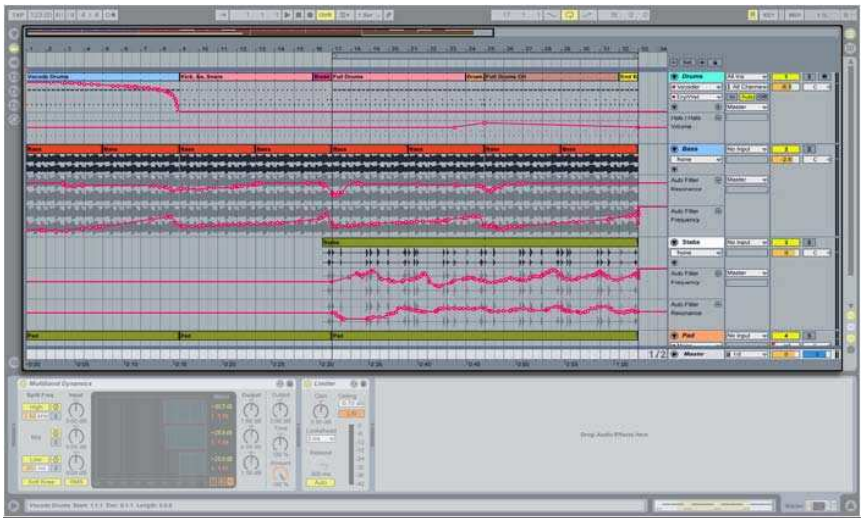
For more detailed information about setting up your hardware, see the Lessons called "Setting up Audio I/O" and "Connecting MIDI Controllers." Live's built-in Lessons are always available by selecting **Help View** from the Help Menu.



2.4. The Fundamentals

The type of document that you create and work on in Live is called a **Live Set**. The basic musical building blocks of Live are called **clips**. A clip can be any piece of musical material: a melody, drum pattern, bassline, or even a whole song.

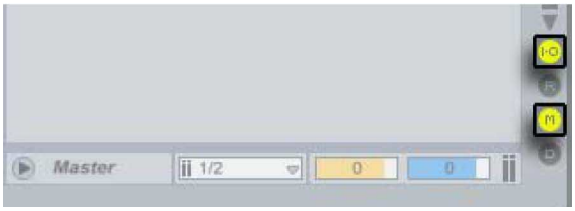
A Live Set consists of two environments that can hold clips: **Arrangement View** uses a musical timeline, with time represented horizontally and tracks stacked vertically.



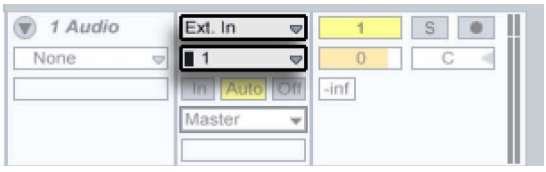
Session View is a real-time-oriented "launching base" for clips. You can switch between Arrangement and Session at any time by pressing the Tab key on your computer keyboard.

2.5. Recording Audio

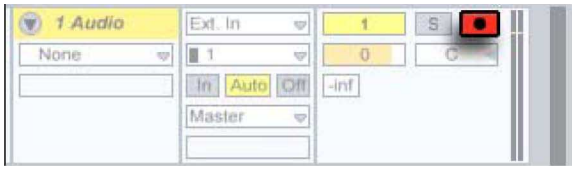
To record into a track in Arrangement View, connect the output of your instrument or microphone into one of the inputs on your audio hardware. Then make sure that the **In/Out** and **Mixer** sections are visible in Arrangement View.



Use the input choosers in the In/Out section of the track to select the input that your instrument or microphone is connected to.

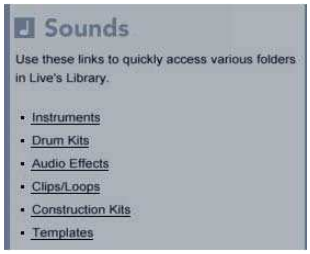


Arm the track for recording.



Press the **Global Record** button to prepare Live for recording. Then press the **Play** button or the computer's space bar to start recording.

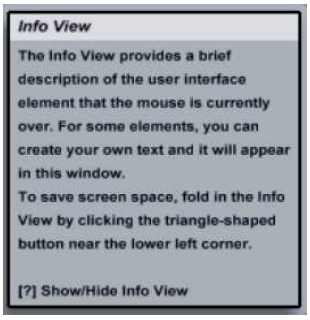
2.6. Finding Sounds



Live Lite comes with a Library full of loops, presets and effects. You can quickly browse to various types of Library content by using the links in the **Sounds** section of Live's Help View.

To load Library content, drag it into Live's work area.

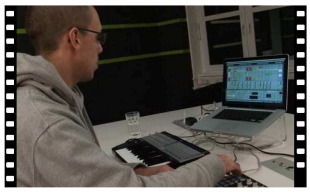
2.7. Learning More



To learn even more about Live, follow Live's comprehensive set of Lessons, which are available from the Help View. For a general introduction to Live's workflow, try the Lesson called "A Tour of Live." There are also lessons about specific production concepts such as creating beats, playing software instruments and DJing.

Live's **Info View** tells you the name and function of whatever you place the mouse over. This is a great way to learn about Live as you work.

For an in-depth look at all of Live's functions, read the Ableton Reference Manual, which can be opened from the Help Menu or from a link at the bottom of the Help View.



There is an ever-expanding collection of movies available at **http://www.ableton.com/movies**. These include tutorial videos, artist interviews and more.

Finally, you can learn from Ableton's active online community at **http://forum.ableton.com**.

3. Analog Factory HipHop Edition

3.1. Introduction

3.1.1. History

In early 2001, Arturia began working on an advanced algorithm for the digital emulation of analog circuits' audio characteristics. In non-technical language, this is an unprecedented way of creating the very unique sound one finds in a synthesizer such as the Moog Modular. 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 Moog Modular V with the renowned maker of the original Moog synthesizer, Doctor Bob Moog.

In seeking insight from sound production experts, such as Dr. Moog, as well as avid synthesizer users, Arturia was able to ensure the quality of the instruments they made; so well in fact the Dr. Moog himself endorsed the Moog Modular V. 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 by 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, was launched at the AES 2003 in New York. Imagine some of your favorite music from diverse artists such as Keith Emerson or Stevie Wonder, and you will have a mental glimpse of the sonic capabilities of the CS-80V.

Released at the NAMM 2004, the minimoog V is a recreation of the Minimoog, quite possibly the most famous synthesizer ever. The original minimoog has been big on the music scene since the 70's; still today the Minimoog has a large following for its many sound capabilities.

The ARP 2600 V was launched at the NAMM 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 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.

3.1.2. Here and Now

Analogue Factory brings you the best spectrum of sounds from all of the above instruments in an easy to use, no-hassle interface. As you will soon see in exploring the instrument yourself, a single instrument gives you your pick from the most complete synthesis sound palette one could ask for.

If you have never played a real synth, or even if you don't know what a synthesizer is, it is not important; you will be glad to have invested in such a powerful instrument once you hear the difference Analog Factory makes in your studio.

3.1.3. TAE®

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

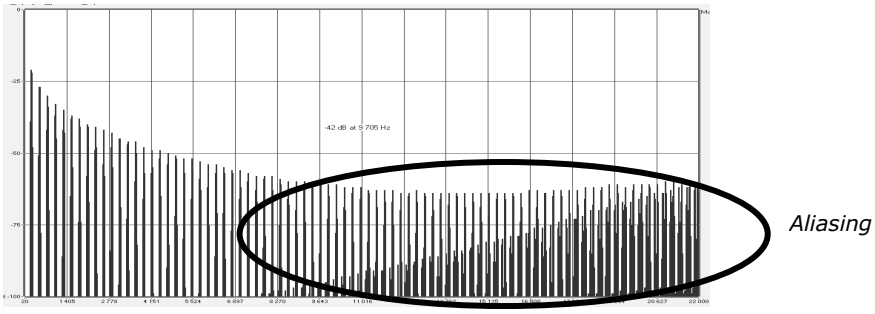
When implemented in software code, TAE®'s algorithms guarantee authentic emulation of hardware specifications. This is why the Analog Factory, and all of Arturia's virtual synthesizers, do offer an unparalleled quality of sound.

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

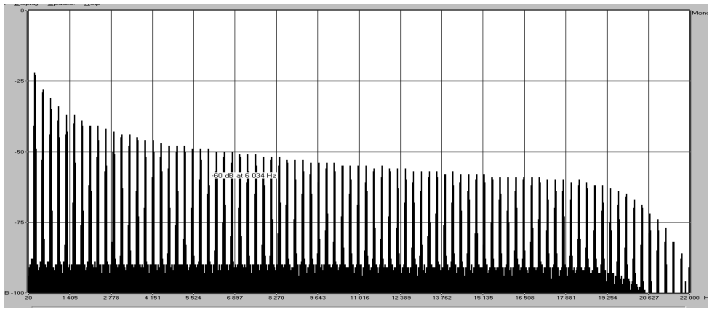
3.1.3.1. Aliasing-free oscillators

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

TAE® allows the production of totally aliasing-free oscillators in all contexts (PWM, FM…), and at no extra CPU cost.



Linear frequency spectrum of an existing well-known software synthesizer

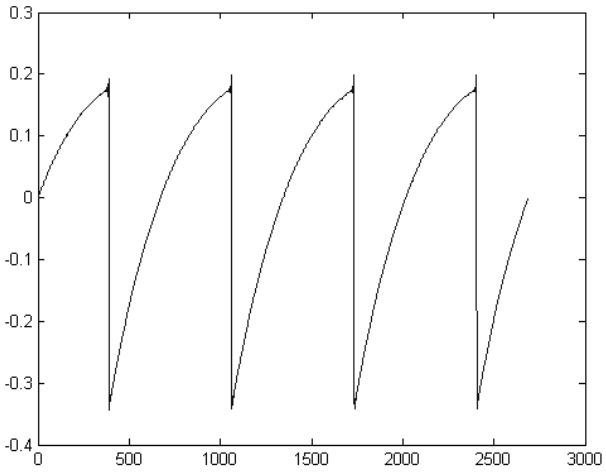


Linear frequency spectrum of the ANALOG FACTORY oscillator made with TAE

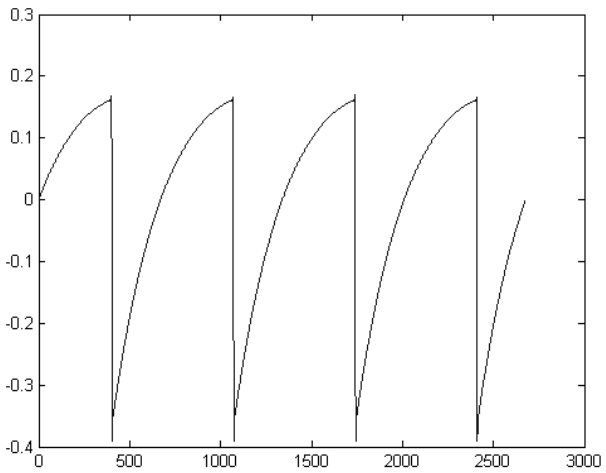
3.1.3.2. A better reproduction of analog oscillator waveforms

The waveforms produced by the oscillators in analog synthesizers are marked by the presence of a capacitor in the circuits. The discharge of the capacitor results in a light bend in the original waveform (notably for saw tooth, triangular and square waveforms). TAE® allows the reproduction of this capacitor discharge. This is the analysis of a waveform from one of the 5 original

instruments that Arturia's software emulates, and that of the ANALOG FACTORY. They are both equally deformed by the low-pass and high-pass filtering.



Temporal representation of a "saw tooth" waveform of an hardware synthesizer



Temporal representation of a "saw tooth" waveform reproduced by TAE

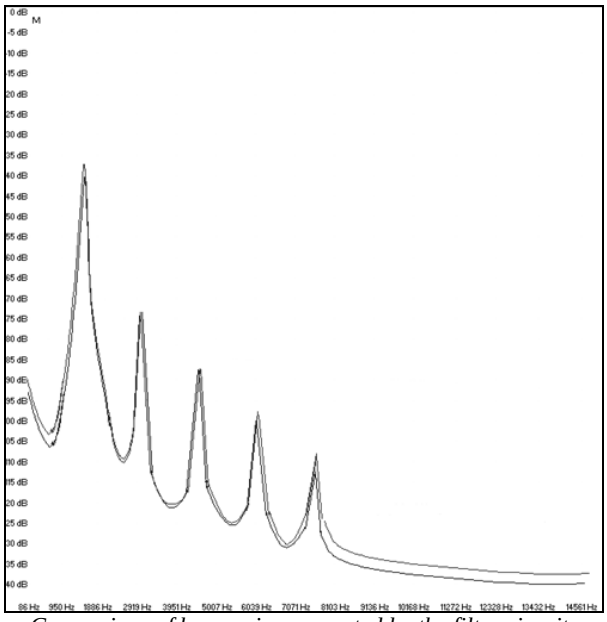
What's more, the hardware analog oscillators were unstable. In fact, their waveform varies slightly from one period to another. If we add to this the fact that the starting point for each period (in Trigger mode) can vary with the temperature and other environmental conditions, we find one of the characteristics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

TAE® reproduces the instability of oscillators, bringing a fatter and "bigger" sound.

3.1.3.3. Direct Filter Circuit Modeling

Due to advances in computer processing power, the ANALOG FACTORY 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.

This graph is a frequency domain plot as just a single example of direct circuit modeling in action; it shows the generation of harmonics at multiples of the resonant frequency when the filter is in self oscillation mode, for both one of Arturia's virtual instruments and what it is emulating. These harmonics are characteristic of hardware synthesizer's filters and are due to the non-linear behavior inherent in its analog circuitry. The harmonics generated add to the richness and warmth of the sound produced by the filter. As a result of the direct recreation of this analog circuitry, the same characteristics of the sound are present, thus giving the user a truly analog sound.



Comparison of harmonics generated by the filter circuits
of the ANALOG FACTORY and a hardware synthesizer when in self-oscillation

3.2. Authorization

In the bundle box you will find a product registration card, showing a **serial number** and an **unlock code**. These allow you to register and identify yourself as an Arturia customer, therefore being able to authorize all instruments contained in the pack: http://www.arturia.com/login

The Registration Card

Once you registered your HipHop Producer pack, you are prompted to the activation code for the Analog Factory HipHop Edition.

Copy this code and paste it in the pop-up window that shows when you launch the Analog Factory synthesizer:

Activation window

Once activated, the Analog Factory HipHop Edition main interface shows up:

Your synthesizer is now correctly authorized, and ready for growling.

3.3. Using Analog Factory

3.3.1. Preferences

Preferences are set in Analog Factory by clicking on the Analog Factory logo on the virtual keyboard. The following options are available:

SHOW ANIMATION	Choose to activate or deactivate the animation (keyboard and Preset Manager folding).
SHOW CONTROL POPUP WHEN MOUSE CLICKS ON CONTROL	A small popup window appears each time that the mouse clicks on a modifiable parameter in order to give information about the parameter and modifiable values. Choose ON to activate this preference, or OFF to deactivate it. Default is **ON**.
SHOW CONTROL POPUP WHEN MOUSE RESTS ON CONTROL	A popup window will appear when the mouse is left upon a modifiable parameter giving information about the parameter and the modifiable values. Choose ON to activate this preference, or OFF to deactivate it. Default is **ON**.
LCD COLOR	This function offers a choice between several available colors/combinations on the Preset Manager screen.

3.3.2. Tool Bar

Tool Bar

The tool bar consists of an ensemble of essential icons for the ANALOG FACTORY organized from left to right allowing the user to see/have access to:

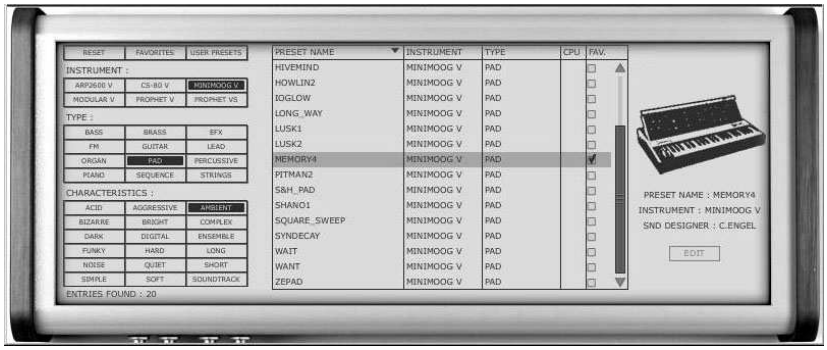
PRESET NAME INSTRUMENT TYPE	Name of the current preset, name of the Instrument, and the Type of instrument.
SAVE AS	Saving presets (sound programming). This function allows the user to save a preset which has been modified, including giving it a new name. This new preset will be a USER Preset, opposed to a FACTORY Preset (which cannot be modified). When one chooses the "Save As" function, a window opens allowing the user to

	name and classify the new preset according to TYPE and CHARACTERISTICS. ⚠ *So that the foundation of the instrument remain intact, it is not possible to save or delete a Factory preset (that comes installed in the software). However, the "Save As" function allows the modification and saving of a preset under another name that the user chooses.*
SAVE	Permits one to save a USER Preset.
DELETE	You can delete any USER preset with this function.
IMPORT	Permits the user to import a document containing the USER presets for Analog Factory (allowing you to add presets from your personal collection). The document referred to is called "***.afpresets**". To import, click on IMPORT and then the local "***.afpresets**" document in your computer. If the document being imported has the same name as existing presets, the following options will appear: Duplicate, Replace or Skip. "Duplicate" leaves two presets with the same name listed in the Preset Manager. "Replace" will replace the current preset with the same name with that of the one being imported. "Skip" will stop the new preset from being imported.
EXPORT	Choose this function to export USER Presets. Click on "Export", choose the destination of the "***.afpresets**" document which will be created, and give it a name. ⚠ *So that the foundation of Analog Factory remains intact, it is not possible to Import/Export Factory presets.*
MIDI IN	Light signaling MIDI activity: will illuminate when a note from an external MIDI controller or keyboard is pushed.
MIDI CH.	This drop-down menu offers the channel choice from which Analog Factory receives MIDI information. Default is OMNI (responds to data on all MIDI channels).
TUNE	General settings for the tuning of Analog Factory. This allows the user to finely tune the general tuning of the instrument.
VIEW	Choose the view of the interface. The selection buttons offer the choice to View all of Analog Factory, only the Preset manager, or only the Keyboard.

3.3.3. Using Preset Manager

Presets account for the various sounds of Analog Factory: there are 250! A preset contains all the settings information of the different controllers necessary to reproduce a sound. In Analog Factory, there are various ways in which the Presets are classed and filtered in order to simplify preset management and find the appropriate sounds for a song; one won't have to search 250 presets to find the desired sound. These filters are listed on the left of the Preset Manager menu and presented as follows: **Instrument**, **Type**, and **Characteristics**.

Let's take a moment to look at each.



Preset Manager

3.3.3.1. Instrument

"Instrument" refers to one of the 4 instruments from which Analog Factory draws its sound. The instruments include:

- Moog Modular V
- CS-80 V
- minimoog V
- Arp 2600 V

If, for example, one clicks on CS-80 V, the Preset Manager will provide a list of presets uniquely from the CS-80 V. But one can also chose to browse for more than one Instrument; that means the user can look for sounds from CS-80 V and ARP2600 V at the same time by selecting both instruments in the "Instrument" frame. When no Instruments are selected for preset filtering, then the Manager will either automatically list all presets or list presets based on other filters.

All presets are listed to the immediate right of the filters under Preset Name.

3.3.3.2. Type

"Type" refers to instrument type being synthesized. Just as in the above example, one may select only "Type" to have access to the list below:

- Bass
- Pad
- Lead
- EFX (sound effect)
- FM
- Brass
- Percussive
- Sequence
- Strings
- Guitar
- Organ
- Piano

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 MOOG MODULAR V and ARP2600 V in the Instruments filter. The Preset Manager will then offer a list fulfilling only the above criteria.

3.3.3.3. Characteristics

To further filter the choices, there is a third filter offered. "Characteristics" allows the user to choose presets according to a mood or ambiance. The choices available are as follows:

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

Once again, these filters can be applied either individually or in any combination that the user wishes in order to find the ideal presets.

3.3.3.4. Entries Found

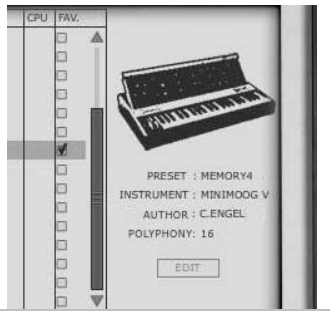
This number, found at the bottom right of the Preset Manager, indicates the amount of Presets that correspond to a preset search.

3.3.3.5. Filter Options

Above the filters are three buttons: Reset, Favorites, and User. These buttons function as follows:

RESET	Removes any filters that the user may have applied to the presets so that a new search may be started.
FAVORITES	Presents only the favorites that the user has checked in the favorites list. When the Favorites Filter Option is selected, then the filters (Instrument, Type, and Characteristics) will be applied only to the list of favorites.
USER	An abbreviation of USER PRESETS. Since the user can modify and create new presets, he may also choose the Filter Option "USER" in order to view and search among only the presets created by the user.

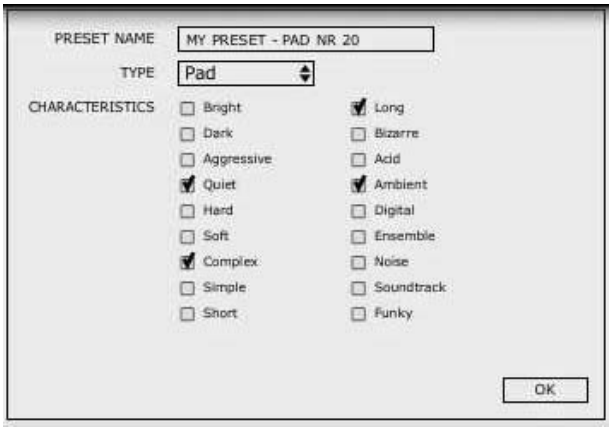
3.3.3.6. Current Preset Information



Information on the current preset, or an "Identity Card", is found to the right of the Preset Manager.

An image of the original instrument which the preset is based upon is presented along with the following information:

PRESET	The name of the current preset
INSTRUMENT	The name of the virtual instrument
AUTHOR	The name of the sound designer who created the preset
POLYPHONY	This shows the number of available voices for the current preset.
EDIT PRESET	If the current preset selected is a USER Preset, it is possible to edit its information. By clicking on this option, a window similar to that of the Save As function appears. It is possible to change the Preset Name, Type (Bass, Brass, Pad, Lead, etc …) and the Characteristics (simply click in the boxes corresponding to the 18 possible options: Bright, Dark, Aggressive, Quiet, Hard, Soft, etc…).



EDIT Preset Window

3.3.3.7. Organization

In addition to the Preset Filters that help the user easily search and select among the 250 various presets, there are also view options within the Preset Manager that permit the user to choose how the presets are listed.

When the user selects the filter criteria, the list of Presets appears in a vertical column in the middle of the screen under:

PRESET NAME	By default, the presets will be listed automatically in alphabetical order from A to Z under Preset Name. However, if the user prefers, the presets can be arranged on the screen according to other criteria in the adjacent columns:
INSTRUMENT	In this column, the name of the original instrument that produced the sound is offered for each preset. Therefore, it will list among the following instruments: minimoog, Moog Modular V, ARP 2600 V, CS-80 V. When the user clicks on the title bar labeled Instrument, the columns will reorganize alphabetically under the Instrument column.
TYPE	In this column, the TYPE of instrument appears corresponding to each preset. By clicking at the top of the column on the TYPE title bar, the presets presented will be listed alphabetically according to TYPE in the same column.
CPU	In this column, the CPU usage rate appears for each preset. By clicking the title bar labeled CPU at the top of this column, the presets will be arranged on a scale from 1 to 5. 1 represents a weak CPU usage rate while 5 represents a strong CPU usage rate.
FAV	Favorites permit the user to classify presets according to usage or general preference as one does in popular media players. Simply check one's favorite presets and access them by clicking the title bar at the top of the column. One may also easily access the Favorites with the Favorites Filter Option.

3.3.4. Keyboard View

The Keyboard view of Analog Factory (accessed either by the "Keyboard" or "All" view in the toolbar) gives the user access to both the virtual keyboard and all the controls with which the user can modify the sound of the presets. We will take a moment now to look at those controls.

3.3.4.1. Virtual keyboard

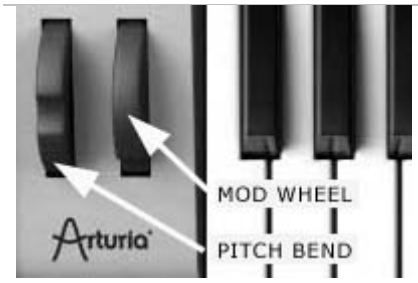
The knob called "**LEVEL"** controls the general volume of Analog Factory. The more the knob is turned to the right the higher the output level is raised.

The virtual keyboard visually presents 32 keys and allows one to produce the sounds of Analog Factory without the need for an external master MIDI keyboard. With the aid of the *TRANSPOSE function* found to the left of the virtual keyboard above the modulation wheels, the user may scroll up or down the keyboard for notes in higher or lower ranges than is visually presented.

Virtual Keyboard

3.3.4.2. The wheels

The wheels found on the left side of the virtual keyboard, give the user control over the frequency of the sound ("PITCH") and the modulation rate ("MOD").



PITCH BEND	Wheel controlling the pitch of the tone. When pushed in the up direction, the sound "bends" and becomes higher in tune. When pushed in the Down direction, the sound "bends" and becomes lower in tune.
MOD WHEEL	Wheel controlling modulation (MIDI controller #1)

3.3.4.3. Filter

CUTOFF	Modifies the cut-off frequency: this filter has the ability to make the sound more or less bright by controlling the amount of high frequencies
RESO	Modifies the resonance of the filter: the sound becomes more "cutting" when the parameter is pushed

3.3.4.4. LFO

The LFO, Low Frequency Oscillator, is used as a modulation source for Analog Factory's sound. It allows the user to create variations in a sound parameter to generate diverse effects such as a vibrato, "wahwah" effect, etc. The two parameters that may be modulated within the LFO are:

RATE	Knob setting the LFO rate/speed
AMOUNT	Knob setting for the amount of LFO modulation

3.3.4.5. Key Parameters

The key parameters section will prove to be particularly useful. This section is found in the middle of the *Keyboard View* and labeled with the aforementioned name.

Key parameters

Each preset offers the four most pertinent parameters unique to that preset. Our sound designers have taken the greatest care to assign parameters that will enrich and give depth to the sound of each preset. In this way, only the parameters that are the most beneficial when modifying/tweaking a given sound are available, facilitating the production process.

To know which 4 parameters have been selected for each preset, simply drop an eye just above the virtual keyboard: 4 information blocks teach you the parameter affected to each controller, with their respective colors:

3.3.4.6. FX MIX (Effects Mix)

Analog Factory also carries a simple yet efficient effects section. The two effects, Chorus and Delay, are automatically synchronized to the tempo of a piece in the user's sequencer. If none the less, the user wishes to access more advanced effects, they are available in most sequencer programs (Cubase, Garage Band, Pro Tools, to name just a few).

CHORUS	The Chorus effect permits one to double and detune the sound in order to make it deeper and richer. The Chorus MIX controls the amount of Chorus applied to the original sound, making it more wet or dry.
DELAY	The Delay carries an echo effect (repetition of the sound) that gives space to the tone. The speed of these repetitions is automatically synchronized to MIDI tempo (the tempo of a song in the host sequencer). The user simply has to adjust the Delay MIX knob to control the quantity of the effect.

3.3.4.7. ADSR faders

The "ADSR" envelope is composed of four successive sequential periods in the life of a note: Attack time, Decay time, Sustain time, and the Release time.

ATTACK	Begins when a note is activated. The Attack time may be short and dry (as in percussion) or long and ascending (as with a pad sound)
DECAY	Follows the Attack. The Decay is a period in which the amplitude of the sound is reduced to the sustain level.
SUSTAIN	The sustain level of the note, as long as the note is active/held
RELEASE	The end of the sound. The release can be short or stretch out over a longer duration

Thanks to these 4 faders (A, D, S, and R) you can very simply edit the amplitude curve envelope of each sound within Analog Factory. If, for example, you find a sound pleasant but the attack is too long, you can use the A fader to reduce it.

As will be described in the following paragraphs, the diverse parameters of Analog Factory can be controlled from an external MIDI keyboard making the manipulation of the instrument much more practical and quicker than manipulations with a mouse. It is in this spirit that the instrument was created. It is recommended to use Analog Factory with an external MIDI keyboard.

3.3.4.8. SNAPSHOT Buttons

The Snapshot buttons are found at the top left hand corner of the Keyboard view. These eight buttons allow the user to quickly save any preset being used, along with modifications that may have been made to them, for easy access. These 8 snapshots are automatically saved when Analog Factory closes and will be automatically available when the program is reopened.

This feature is especially useful when an artist plays live because these 8 Snapshots can then be easily accessed from a MIDI interface. This means that the user can stock 8 favorite presets along with any modifications previously made, and have everything needed at the touch of a button on a MIDI interface during a live session without referencing the computer screen.

It can also be useful for comparing modifications to sound in order to choose which fits best into a musical production. For example one could store 8 different states of the same preset: first state or original, second with the Cutoff applied, third state using the delay, etc…

Snapshot buttons

To take a Snapshot, simply **Shift+Click** on one of the snapshots buttons in order to save the preset currently being used. Then, later, to recall the preset along with any modifications that may have been made to it, click on the same button.

If the same **Shift+Click** operation is done on the same button, then the current Snapshot will be replaced without prompting the user.

3.3.4.9. MIDI control

Most of the knobs, sliders, and switches on the Analog Factory can be manipulated with external MIDI controllers, and this is ideally the way they should be controlled, in order to get a high level of usability. Before anything else, the user should make sure that the MIDI device being used is correctly connected to the computer, and that the sequencer or the Analog Factory application is correctly configured to receive MIDI events coming from the device.

Every instance of the Analog Factory receives MIDI events transmitted on a given channel. This reception channel is defined in a global manner for the synthesizer, either in the sequencer, or in the standalone Analog Factory application. On the reception channel, the Analog Factory can receive different MIDI controls.

It is possible to choose a reception control for each knob, which means assigning an external controller to a given parameter. For this, one should **click on the knob being used while holding down the Control key**. A configuration window appears and offers the choice of a MIDI control number. The user can also click on the "Learn" button and move one of the physical MIDI controllers. In this case, the control number will be detected and configured automatically. To deactivate the MIDI control of a knob, simply uncheck the "Active" option in the MIDI control window.

MIDI assignation of the Chorus controller

3.4. Modes of Operation

3.4.1. Stand-alone and MIDI Configuration

The stand-alone application allows the use of the Analog Factory outside of any host application. You can open the instrument from its location in the start menu or on your desktop, and play directly with the help of a master MIDI keyboard or external sequencer on a separate computer.

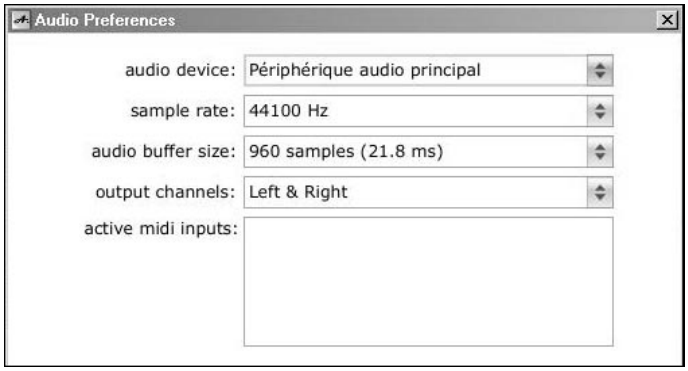
3.4.1.1. Launching the Stand-alone application

To launch the Stand-alone application on your PC, go into the menu "Start > Programs > Arturia" and choose Analog Factory.

On a Macintosh, open the folder **`/Applications/Arturia Analog Factory/`** and double click on the application icon Analog Factory.

3.4.1.2. Preferences configuration

In order to access the preferences window, click on the menu "File > Audio & MIDI Preferences" (both Mac OS X and Windows). This window allows you to configure the global preferences of the Analog Factory application. These are saved automatically.



The preferences window

AUDIO DEVICE	Here, select the driver corresponding to the sound menu that you wish to use.
SAMPLE RATE	Here, choose the sampling frequency among those proposed by your sound menu. Note that a higher sampling frequency rate settings will demand increasing processor performance from your computer.
AUDIO BUFFER SIZE	Here, you can configure the optimal audio latency as it relates to performance of your sound card. Be careful with this setting, as a latency setting lower than your system can support can cause unwanted artifacts in the sound.
OUTPUT CHANNELS	Select the audio output channel. If the sound menu offers several outgoing channels, choose the pair of output channels that you wish to use.
ACTIVE MIDI INPUTS	Select the MIDI devices you want to use to control the synthesizer.

3.4.2. Instantiated in Live

3.4.2.1. Installation

3.4.2.1.1. Windows

During installation, the box "VST" must have been selected among the proposed format choices of plug-ins. The installer will automatically detect the VST folder of the instruments used by Live. In the case of another compatible VST sequencer, such as Cubase, you will have to manually copy the plug-in file in the appropriate folder. The direct path to this file is:

`C:\Program\Files\Arturia\Analog Factory\Analog Factory.dll`

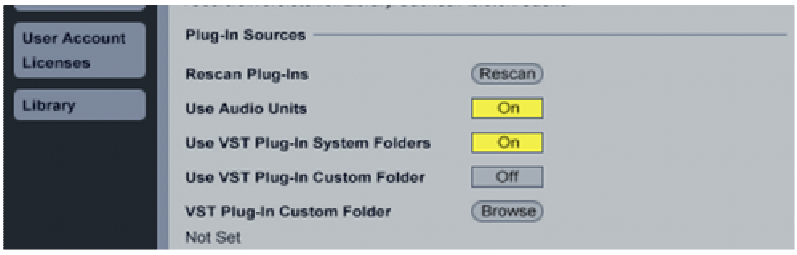
3.4.2.1.2. Mac OSX

The VST plug-in is automatically installed in the folder of the system corresponding to the VST instruments: **`/Library/Audio/Plug-Ins/VST/`**. The VST plug-in will be usable by all your VST host applications.

3.4.2.2. Instrument use in the VST mode

Opening the Analog Factory HipHop Edition plug-in is done like any other plug-in, please consult the user manual of the host sequencer for more accurate information.

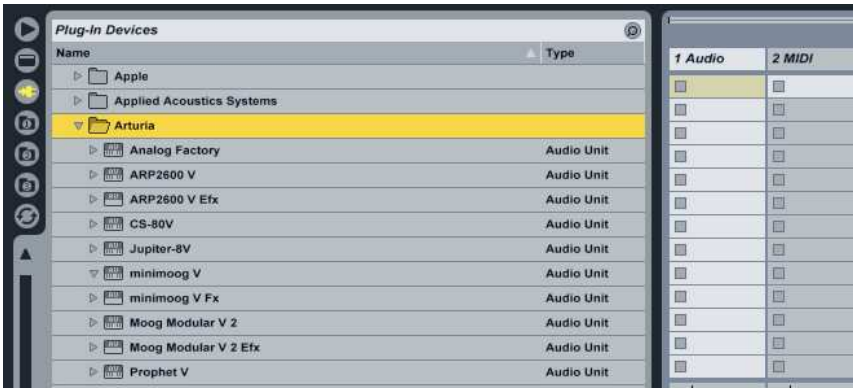
In Live > Preferences > File Folder, please check that the Audio Unit and VST boxes are active as displayed below:



Set the VST folder for Ableton live

3.4.2.2.1. Insert an Instrument Track

To insert an instrument track, open the left sided folder. All your plug-in devices are listed as below. Then, double click on your Instrument will create a MIDI track which include your Analog Factory.



List of the plug-in devices

3.4.2.2.2. Opening the instrument

To open your instrument, display the Detail view by double clicking on the MIDI track or press [Command]+[Alt]+L on Mac, [AltGr]+L on Windows. The detail view shows the device and an assignable X–Y control pad.

Live's detail view

The first button is a On/Off Switch for the VST, the second one is to define the parameters of the instrument, and the third is to open the Analog Factory window:

The three buttons

Ableton Live is able to use your instrument in VST mode and Audio Unit mode if you work on a Macintosh. The text above works for both.

3.5. End User License Agreement

Grant of License
In consideration of payment of the Licensee fee, which is a portion of the price you paid, Arturia, as Licensor, grants to you, the Licensee, a nonexclusive right to use this copy of the Analog Factory program (hereinafter the "SOFTWARE") on a single computer at a time. All rights not expressly granted to Licensee are reserved to Arturia.

Software Ownership
As the Licensee you own the disks on which the SOFTWARE is recorded or fixed. Arturia shall retain full and complete title to the SOFTWARE recorded on the enclosed disks and all subsequent copies of the SOFTWARE, regardless of the media or form on or in which the original disks or copies may exist. This License is not a sale of the original SOFTWARE.

Copyright Restrictions
This SOFTWARE and the accompanying printed or written materials are copyrighted. Unauthorized copying of the SOFTWARE, including those instances where the SOFTWARE has been modified, merged, or included with other Software, or of the printed or written materials, for any reason, is expressly forbidden. Licensee may be held liable for copyright infringement which results from such unauthorized copying.

Restrictions on Use
Licensee may physically transfer the SOFTWARE from one computer to another, provided that the SOFTWARE is used on only one computer at any one time. Licensee may not electronically transfer the SOFTWARE to multiple computers over a network system. Licensee may not distribute copies of the SOFTWARE or accompanying materials to others. Licensee may not modify, adapt, translate, reverse engineer, decompile, disassemble, or create derivative works based on the SOFTWARE or its accompanying printed or written materials.

Transfer Restrictions
Licensee shall not assign, rent, lease, sell, sublicense or otherwise transfer the SOFTWARE to another party without prior written consent of Arturia. Any party authorized by Arturia to receive the SOFTWARE must agree to be bound by the terms and conditions of this Agreement.

Limited Warranty
Arturia warrants that the disks on which the SOFTWARE is furnished to be free from defects in materials and workmanship under normal use for a period of thirty (30) days from the date of purchase. Your receipt shall be evidence of the date of purchase. Any implied warranties on the SOFTWARE are limited to thirty (30) days from the date of purchase. Some states do not allow limitations on duration of an implied warranty, so the above limitation may not apply to you. All programs and accompanying materials are provided "as is" without warranty of any kind. The complete risk as to the quality and performance of the programs is with you. Should the program prove defective, you assume the entire cost of all necessary servicing, repair or correction.

Remedies
Arturia's entire liability and your exclusive remedy shall be at Arturia's option either (a) return of the purchase price or (b) replacement of the disk that does not meet the Limited Warranty and which is returned to Arturia with a copy of your receipt. This limited Warranty is void if failure of the SOFTWARE has resulted from accident, abuse, modification, or misapplication. Any replacement software will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

No other Warranties
The above warranties are in lieu of all other warranties, expressed or implied, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose. No oral or written information or advice given by Arturia, its dealers, distributors, agents or employees shall create a warranty or in any way increase the scope of this limited warranty.

No Liability for Consequential Damages

Neither Arturia nor anyone else involved in the creation, production, or delivery of this product shall be liable for any direct, indirect, consequential, or incidental damages arising out of the use of, or inability to use this product (including without limitation, damages for loss of business profits, business interruption, loss of business information and the like) even if Arturia was previously advised of the possibility of such damages. Some states do not allow limitations on the length of an implied warranty or the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

4. Lounge Lizard Session

Visit Applied Acoustics Systems DVM Inc. on the World Wide Web at www.applied-acoustics.com

4.1. Introduction

The *Lounge Lizard Session* is a software electric piano based on the classic instruments of the seventies (Rhodes, Wurlitzer). This special edition is a simplified version of the well-known A|A|S *Lounge Lizard EP*. Each component of an electric piano has been modeled with A|A|S cutting edge physical modeling technology to provide realistic and lively sounds.

Physical modeling uses the laws of physics to reproduce the behavior of an object. In other words, the *Lounge Lizard Session* solves, in real time, mathematical equations describing how its different components function. No sampling or wavetables are used in the *Lounge Lizard Session*, the sound is simply calculated in real time by the CPU according to the values each parameter is receiving.

Before discussing the synthesizer in more detail, we would like to take this opportunity to thank you for choosing an A|A|S product. We sincerely hope that this product will bring you inspiration, pleasure and fulfill your creative needs.

4.1.1. System requirements

The following computer configuration is necessary to run the *Lounge Lizard Session*:

Mac OS

- Mac OSX 10.2 (Jaguar) or later.
- G4 733 MHz Processor
- 256 MB RAM
- 1024 x 768 or higher screen resolution
- MIDI Keyboard (recommended)
- Internet connection
- Quicktime 4.0 or later

Windows

- Windows 98SE/ME/2000/XP
- PIII 800 MHz
- 128 MB RAM
- 1024 x 768 or higher screen resolution
- DirectX or ASIO supported sound card

MIDI Keyboard (recommended)

Keep in mind that the computational power required by the *Lounge Lizard Session* depends on the number of voices of polyphony and the sampling rate used. These computer configurations will enable you to play the factory presets with a reasonable number of voices.

4.1.2. Installation

4.1.2.1. Mac OS

Insert the *Lounge Lizard Session* program disc into your CD-ROM drive. Open the CD icon once it appears on your desktop. Click on the *Lounge Lizard Session* Install icon and follow the instructions of the installer.

If you purchased this software online, simply double-click on the installer file that you have downloaded and follow the instructions of the installer.

4.1.2.2. Windows

Insert the *Lounge Lizard Session* program disc into your CD-ROM drive. Launch Explorer to view the content of the CD-ROM and double-click on the installer file to launch the installer.

If you purchased this software online, simply double-click on the installer file that you have downloaded and follow the instructions of the installer.

4.1.3. Authorization and Registration

The *Lounge Lizard Session* uses a proprietary challenge/response copy protection system which requires authorization of the product. A *challenge key* is a long string of capital letters and numbers that is generated uniquely for each machine during the registration process. In other words, for each machine you install this program on, a different challenge key will be generated by the program. The *response key* is another unique string of capital letters and numbers generated from the data encrypted in the challenge key. In order to obtain a response key, you will need to connect to the A|A|S website and provide the following information:

- A valid email address
- Your product serial number, obtained once registered on your Arturia account (see Chapter 1.5)
- The challenge key generated by the program

Note that it is possible to use the program during 15 days before completing the authorization process. This period can be convenient if you are installing the program on a computer which is not connected to the internet. After that period, the program will not function unless it is supplied with a response key.

In the following sections we review the different steps required to generate the challenge keys and obtain the response key. The procedure is similar on Windows XP and Mac OS systems.

4.1.3.1. Step 1: Generating the challenge key

After launching the installer for the first time, a pop-up window will appear asking you if you wish to authorize your product now or later. If you are ready to authorize *Lounge Lizard Session* now, click on the **Next** button otherwise click on the **Authorize Later** button. If your computer is connected to the internet, we recommend that you authorize your product now.

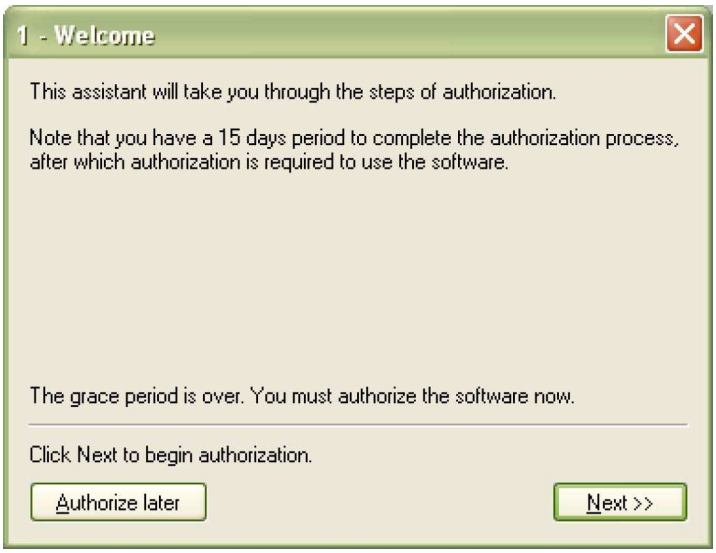


Figure 1: Choosing to authorize Lounge Lizard Session now or later.

When you click on the **Next** button, a second window appears asking you to enter your serial number. Type your serial number as it appears on the back of the sleeve of the *Lounge Lizard Session* CD-ROM. If you purchased *Lounge Lizard Session* online, an email with your serial number will have been sent to you at the address which you provided during the purchase process.

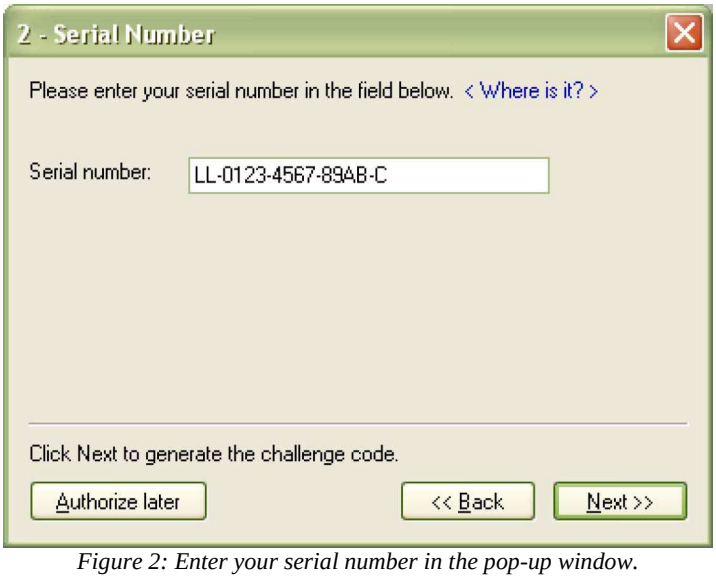


Figure 2: Enter your serial number in the pop-up window.

After entering your serial number, click on the Next button and your challenge key will appear automatically in the next pop-up window.

4.1.3.2. Step 2: Generating the Response key and Registering your product

If your computer is connected to the internet, click on the link to the A|A|S web server appearing in the pop-up window. This will launch your web browser and connect you to the unlock page of the

A|A|S web server. Enter your email address, serial number and challenge key in the form as shown below and click on the *Submit* button.

The next form asks you to provide additional information about yourself including your mailing address and phone number. This information will be used to register your product. Note that only a valid email address is required to register your product. We nevertheless recommend this information be provided to ensure our support team is able to contact you to resolve any future support issues, and notify you of product updates promptly. This information is kept completely confidential. Registration of your product will entitle you to receive support and download updates when available, as well as take advantage of special upgrade prices offered from time to time to registered A|A|S users. Note that if you already purchased or registered another A|A|S product, the information that you have already supplied under the same email address will appear in the form. Feel free to update this information if it is outdated. Click on the *Submit* button and your response key will appear on-screen.

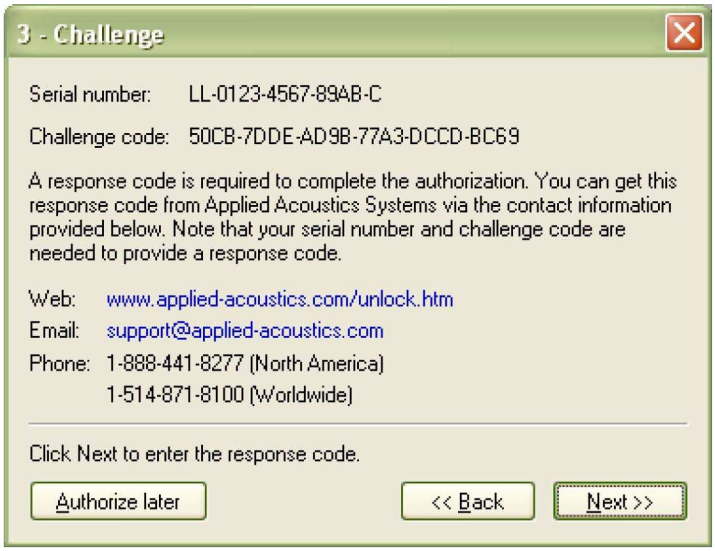


Figure 3: Challenge key appears automatically after entering the serial number.

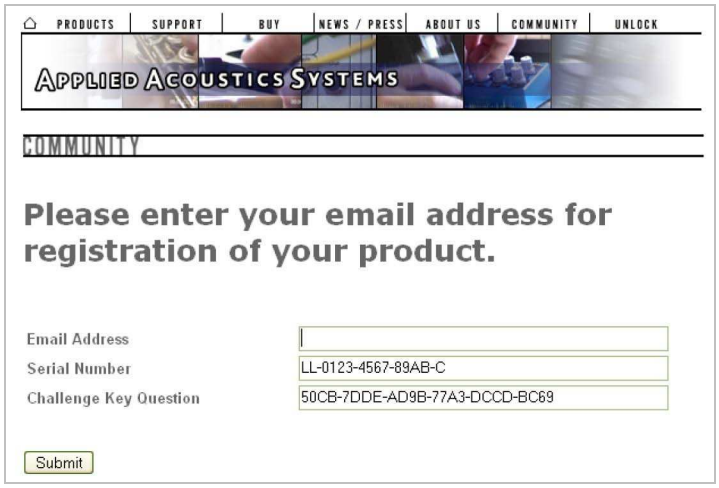


Figure 4: Enter your registration information on the A|A|S server.

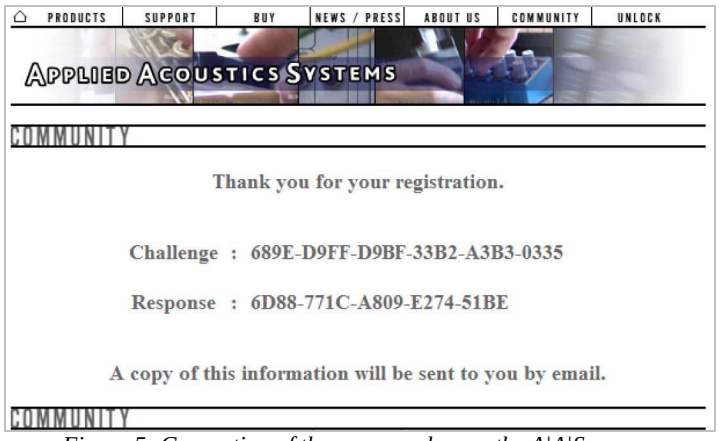


Figure 5: Generation of the response key on the A|A|S server.

If your computer is not connected to the internet, take note of your serial number and *challenge key* and proceed to an internet connected computer. Launch your browser and go to the unlock page of the A|A|S website at:

- **http://www.applied-acoustics.com/unlock.htm**

Enter your email address, serial number, and challenge key, and click next. You will then receive your response code on-screen as described above.

4.1.3.3. Step 3: Completing the unlock process

The *response key* corresponding to your serial number and *challenge key* will be printed in your browser window. In order to complete the unlock process, copy the response key and paste it into the corresponding field of the installer window of *Lounge Lizard Session*. If you obtained your response key from another computer, type the response key by hand in the installer window.

Click on the *Next* button and a pop-up window will appear informing you that the authorization process has been successful. Click on the **Finish** button to complete the process and launch *Lounge Lizard Session*.

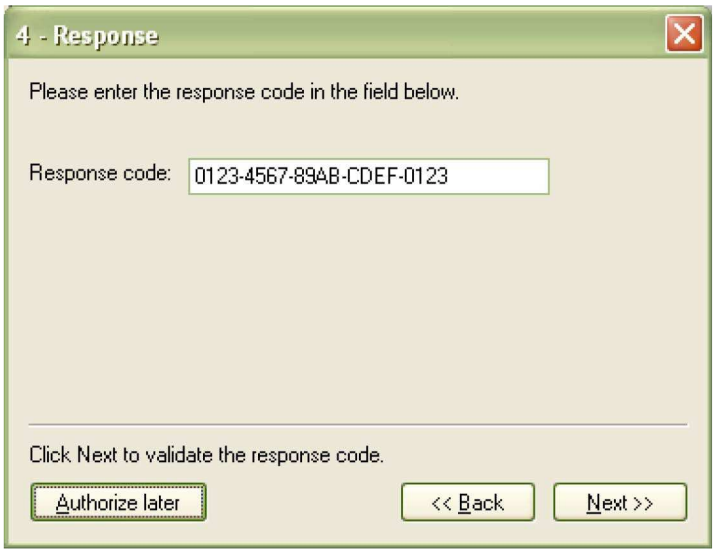


Figure 6: Final step of the unlock process. Enter your response key in the window.

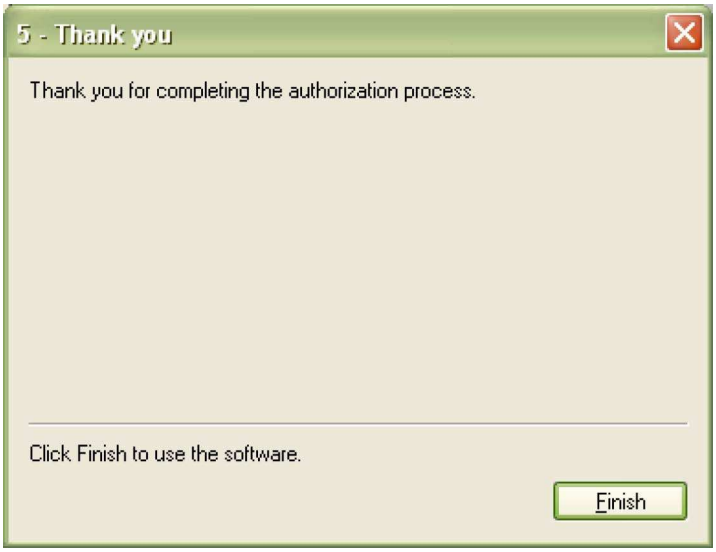


Figure 7: Authorization has been successful.

You will normally only need to go this process once for a given computer except for some special cases. On Windows computers your will need to unlock again if:

- You change your computer
- You reformat or upgrade your hard drive
- You change or upgrade your operating system

On Mac OS computers, this will only be necessary if:

- You change your computer
- You change the motherboard of the computer

4.1.3.4. Obtaining your response key and registering by fax or over the phone

Should you not have access to the internet, A|A|S support representatives are available to assist you in the unlock and registration process Monday to Friday, 9am to 6pm EST. You may contact us by phone at:

North America Toll-free number:	1-888-441-8277
Outside North America:	1-514-871-8100
Fax Number:	1-514-845-1875
Email:	support@applied-acoustics.com

4.1.4. Getting started

4.1.4.1. Using Lounge Lizard Session in standalone mode

The *Lounge Lizard Session* comes with a wide range of factory presets right out of the box which amounts to a huge range of sounds before you have even turned a single knob. As you would expect, the best way of coming to grips with the possibilities *Lounge Lizard Session* offers is simply to go through the presets one at a time. We recommend that you first start using the *Lounge Lizard Session* in standalone mode.

- **Windows**
  Double-click on the *Lounge Lizard Session* icon located on your desktop or select *Lounge Lizard Session* from the **Start** > **All Programs** > menu.
- **Mac OS X**
  Double-click on the *Lounge Lizard Session* icon located in the Applications folder.

Before you start exploring the factory presets, take a moment to set up you audio and MIDI configuration as explained below.

4.1.4.1.1. Audio Configuration

Audio configuration tools are available from the **Audio** menu. The **Audio Settings** function allows you to select an audio output device from a list, organized by driver type, of those available on your computer. On Windows, if you have ASIO drivers available, these should be selected for optimum performance. Multi-channel interfaces will have their outputs listed as stereo pairs.

Select your sound card port from the list in the **Audio Configuration** dialog from the **Audio** > **Audio Settings…** menu.

For more detailed information on audio configuration, sampling rate selection and latency adjustments, please refer to section 4.6.3.

4.1.4.1.2. MIDI Configuration

MIDI configuration tools are available from the **MIDI** menu.

Select your MIDI input device from the list in the **MIDI Configuration** window available from the **MIDI** > **MIDI Settings…** menu.

For more detailed information on Audio and MIDI configuration, MIDI links and MIDI maps, please refer to Chapter 4.6.

4.1.4.2. Exploring the factory presets

Factory presets can easily be accessed using the "+" and "−" buttons in the lower left corner of the toolbar. These buttons are used to navigate through a list of 128 numbered presets called programs. The content of this program list can be viewed by clicking on the ▾ button of the toolbar. The number of the current program used and the name of the associated preset appear on the right of this button. Programs can also be changed by using the "+" and "−" keys from the computer keyboard or by selecting programs directly from the list displayed after clicking clicking on the ▾ button.

Presets can also be accessed using the browser appearing on the left of *Lounge Lizard Session*. This browser is similar to the browser your operating system generates to display the contents of your hard disk, or your email program uses to organize your mail and address book. When launching the application for the first time, this "tree view" will include a destination folder for imported presets as well as a **Library** folder. To open a folder, click on the "+" symbol on Windows or ▸ symbol on Mac OS which will reveal the folder content.

The preset library is different from the program list and can be viewed as a repository containing all the presets available to the application. Presets are loaded into the synthesis engine by copying them from the library into the program list. To load a preset, double-click on a preset icon (blue knob) or preset name. This will insert the preset into the program list at the position of the current program. You can also use the arrow keys on the computer keyboard in order to navigate in the preset list and then the Enter key to load a preset. For additional information on presets and programs, please refer to Chapter 4.2 of this manual.

4.1.4.3. Using MIDI Links

Every parameter on the *Lounge Lizard Session* interface can be linked to an external MIDI controller. To assign a MIDI Link, right-click (control-click on Mac) on a control (knob, button or slider) and a contextual menu will appear. Select **Learn MIDI Link** and move a knob or slider on your MIDI controller to activate the link. To deactivate the link, right-click (control-click on Mac) on the control and choose the **Forget MIDI Link** command. Refer to section 4.6.2 for more details on MIDI links.

4.1.4.4. Using MIDI program changes

The synthesizer responds to MIDI program changes. When a program change is received, the current program is changed to the program having the same number as that of the program change message received by the application.

4.1.4.5. Using Lounge Lizard Session as a Plug-in

The *Lounge Lizard Session* integrates seamlessly into the industry's most popular multi-track recording and sequencing environments as a virtual instrument plug-in. The *Lounge Lizard Session* works as any other plug-in in these environments so we recommend that you refer to your sequencer documentation in case you have problems running the *Lounge Lizard Session* as a plug-in.

4.1.5. Getting help

A|A|S technical support representatives are on hand from Monday to Friday, 9am to 6pm EST. Whether you have a question on *Lounge Lizard Session*, or need a hand getting it up and running as a plug-in in your favorite sequencer, we are here to help. Contact us by phone, fax, or email at:

North America Toll Free:	1-888-441-8277
Worldwide:	1-514-871-8100
Fax:	1-514-845-1875
Email:	support@applied-acoustics.com

Our online support pages contain downloads of the most recent product updates, and answers to frequently asked questions on all A|A|S products. The support pages are located at:

- **http://www.applied-acoustics.com/faq.htm**

4.1.6. Forum and User Library

The A|A|S community site contains the *Lounge Lizard Session* user forum, a place to meet other users and get answers to your questions. The community site also contains an exchange area where you will find presets for your A|A|S products created by other users and where you can make your own creations available to other users.

- **http://community.applied-acoustics.com/php/community/**
- **http://community.applied-acoustics.com/php/forum/**

4.1.7. About this manual

In the next chapter, the use of presets and the browser are described in detail. Chapter 4.3 describes the general architecture of *Lounge Lizard Session*. In Chapter 4.4, the different modules and controls are reviewed in detail. Chapter 4.5 describes the different functionalities available from the toolbar while Chapter 4.6 explains the different functionalities related to Audio and MIDI and their settings. General issues involved in the use of *Lounge Lizard Session* as a plug-in in different host sequencers is covered in Chapter 4.7. Finally a list of available commands and shortcuts is given in Chapter 4.8.

4.2. Presets and MIDI maps

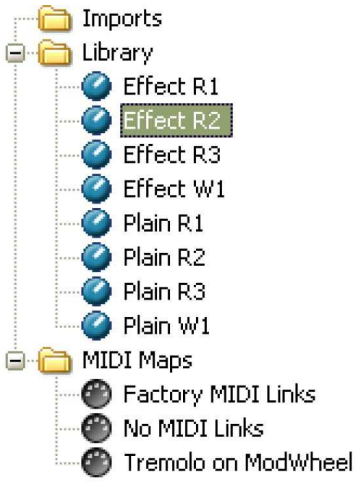
Lounge Lizard Session comes with several factory presets covering a wide range of sounds. This collection of presets lets you play and familiarize yourself with this synthesizer without having to tweak a single knob. Soon, however, you will be experimenting and creating your own sounds and projects that you will need to archive or exchange with other users. You may also want to control

the parameters of *Lounge Lizard Session* with a specific MIDI controller. In this chapter, we will review the management of presets and MIDI maps.

4.2.1. Presets

There are two concepts involved in the management of presets, the preset library and programs.

4.2.1.1. The Preset Library



The preset library contains the factory presets, modified versions of the factory presets you might have made or any other new presets you might have saved. The library may also contain imported presets as well as MIDI maps as explained in Section 4.2.6 and 4.2.7. In other words, the preset library is a repository of all the presets and MIDI maps available to *Lounge Lizard Session*.

All the operations on the preset library are conveniently managed with the help of the *Lounge Lizard Session* browser, similar to those found in most email programs which use a hierarchical tree structure and a visually intuitive, drag and drop approach. To explore the different presets available in the library, open the different folders by clicking on the "+" icon Windows or ▸ symbol on Mac OS to the left of folders. Each preset is represented by a blue knob icon followed by its name.

4.2.1.2. The Program list

Presets are loaded into the synthesis engine of *Lounge Lizard Session* from a list of 128 numbered presets called programs. The name of the current program and its number are displayed in the left of the toolbar at the top of the application window. The entire list of programs can be viewed by clicking on the ▾ button left of the program number.

It is important to note that presets in the program list and in the preset library are stored in different locations. They are in fact different copies of the same presets which may, as explained below, differ even if they share the same name. The version of a preset available in the program list should be viewed as temporary or as a "working copy" of the preset whereas the version in the library should be viewed as permanent or as the "reference version".

When you start the application for the first time, the program list contains a selection of presets from the factory preset library. At that point, the presets in the program list are identical to their version in the library.

4.2.2. Playing and Changing Presets

Presets are always played from the program list. The name of the current program, in other words the one currently loaded in the synthesis engine, as well as its number are displayed in the left part of the toolbar. Its number and name are also preceded by a check mark in the program list. The current program can be changed in different ways:

- Scroll up or down in the program list by clicking on the "+" and "−" buttons located on the left of the program name or use the "+" and "−" keys from the computer keyboard,
- Display the content of the program list by clicking on the ▾ button and select a program by clicking on its name.
- Use the Switch to Program command from the Programs menu and enter a specific program number. This command can also be activated by using the Ctrl-P/Apple-P keyboard shortcut.
- Send MIDI program changes from your MIDI controller. Lounge Lizard Session will load the program having the same number as the program change number received by the application.

A Preset can also be loaded from the preset library. It is then stored in the current program replacing the preset that was already stored in this location. It then becomes immediately available to the synthesis engine. Different options are available to load a preset from the preset library into the current program:

- In the browser, double-click on a preset icon.
- Drag and drop presets from the browser onto the Lounge Lizard Session interface.
- Select a preset by clicking on its icon and use the Enter key from the computer keyboard. Once a preset has been selected in the library, it is possible to navigate in the library using the Arrow keys from the computer keyboard. A preset is selected when its name is highlighted.
- Select a preset and use the Open Preset command from the File menu or the Ctrl-O/Apple-O keyboard shortcut.

Note that when a preset is loaded from the preset library to the list of programs, the program name displayed in the toolbar changes but not its number. This indicates that the current program number used by the synthesis engine is still the same but that the preset corresponding to that program has changed. The 128 programs can therefore be customized by selecting different program numbers (by using the "+" and "−" buttons from the toolbar or selecting programs from the program list) and loading presets from the library.

4.2.3. Editing and Saving Presets

Moving the different controls on the *Lounge Lizard Session* interface modifies the preset loaded in the current program. As soon as the current program is modified, the preset icon located on the left of the program name in the toolbar changes color and a "*" sign is appended to its name in the program list. In this state, the preset loaded in the current program is different from its original version stored in the preset library even if they share the same name. If you wish to keep a permanent copy of the modifications, you must save this new version in the preset library.

- To save the new version in the preset library, use the **Save Preset** command from the **File** menu or the Ctrl-S/Apple-S shortcut. Be careful, however, as using this command will overwrite the original preset. If you are not certain of which preset will be overwritten in the library, first use the **Locate Program in Browser** command from the **Programs** menu or the Ctrl-L/Apple-L shortcut in order to locate it in the browser.
- To create a new preset, use the **Save Preset As** command from the **File** menu. A window will appear asking for a name for the new preset. Once the preset is saved using this command, a new preset icon will appear in the browser directly under the **Library** folder.
- To create a new preset, it is also possible to rename the program using the **Rename Current Program** from the **MIDI** menu (or the Ctrl-R/Apple-R keyboard shortcut) and use the **Save Preset** or **Save Preset As** commands.

When editing presets, it is very helpful to go back and forth between the different stages of your modifications and adjustments. To move back step by step through every modification that was applied to a preset, use the **Undo** command from the **Edit** menu or the Ctrl-Z/Apple-Z shortcut. Once the **Undo** command has been used, it is also possible to move up again through the modifications by using the **Redo** command from the **Edit** menu or the Ctrl-Y/Apple-Y command. The number of **Undo** levels is unlimited and that this command is effective on any control of the interface but not on the different **Save** commands.

Once a preset has been modified, it is also possible to move back and forth between the current state of the preset in the program list and its original version archived in the preset library. To hear the original preset, simply click on the *Compare* button at the top of the interface or use the **Compare** command from the **Edit** menu. Once this button has been pressed, the original settings of the preset are loaded. In this mode, the graphical interface is frozen and it is therefore not possible to modify the preset. To further modify the preset, click on the *Compare* button again or uncheck the **Compare** command in the **Edit** menu to revert to the modified version of the preset and unfreeze the interface. To reload the original version, use the **Locate Preset in Browser** command from the **View** menu, or the Ctrl-L/Apple-L shortcut and double click on its icon in order to reload this version into the current program.

Lounge Lizard Session will make sure that you do not loose modifications to a preset. In the case where a program holds a modified version of a preset and when trying to load a new preset from the library into this program, the application will ask you if you want to save the modified preset in the library. This behavior might not always be convenient and it is possible to deactivate it by deselecting the **Ask to save preset before opening another** option in the **Preferences** command from the **Edit** menu.

4.2.4. Saving the Program List

When you open *Lounge Lizard Session*, the application always loads the same program list. This implies that, by default, the program list will always contain the same presets when you open the application and that your modifications to presets will be lost unless they have been saved in the preset library.

- To save the current list of programs and replace the default program list, use the **Save All Programs** command from the **Programs** menu.

This command is helpful if you wish to modify the program list or if you wish to restart the application in exactly the same state as when you left it.

Note that this operation is not necessary when using *Lounge Lizard Session* as a plug-in in a host sequencer as the program list is always saved with a project. The default program list will be loaded only if a new project is started or if a new instance of *Lounge Lizard Session* is opened within a project.

4.2.5. Organizing the Preset Library

4.2.5.1. Creating Folders

Sub-folders can be created by first selecting a folder by clicking on it and using the **New Folder** command from **File** menu.

4.2.5.2. Copying and Moving Presets and folders

Presets and folders can be copied and moved from one location to another. First select an item by clicking on its icon and use the **Copy** command from the **Edit** menu (Ctrl-C/Apple-C shortcut) in order to copy it. Then click on the destination folder and use the **Paste** command from the **Edit** menu (Ctrl-V/Apple-V shortcut) in order to paste it. Groups of items can be copied and pasted at the same time. In order to select many items at once, click on different icons while keeping the Control/Apple key depressed. Alternatively to select, within a folder, all the presets located between two presets, click on the first one and then on the second one while keeping the Shift key depressed. Once a group of items has been selected, use the **Copy** and **Paste** functions as explained above.

4.2.5.3. Renaming Presets and folders

On Windows systems, to rename a preset or folder, click a first time on the corresponding icon in the browser in order to select it. Then click a second time to enter in name edition mode. Note that this sequence of operation is different from double-clicking on the icon which loads the preset in the case of a preset icon or opens a folder in the case of a folder icon. In other words, there must be a pause between the two clicks.

On Mac systems, first select the item to be renamed and the use the **Rename** command from the **Edit** menu. It is also possible to Ctrl-click on the selected item and then choose the **Rename** command.

4.2.5.4. Deleting Presets and Folders

To delete a preset or folder, first select it by clicking on its icon in the browser, then use the **Delete** command from the **Edit** menu or use the Del key from the computer keyboard. In order to select and then delete many items at once, click on different icons while keeping the Control/Apple key depressed. Alternatively to select, within a folder, all the presets located between two presets, click on the first one and then on the second one while keeping the Shift key depressed. Once the group of items has been selected, use the **Delete** function as explained above.

4.2.5.5. Documenting Presets

It is possible to document a preset and view related information. To view or edit information on a preset, first select it in the browser and choose the. **Preset Info** command from the **Edit** menu or use the Ctrl-I/Apple-I shortcut. It is also possible to right-click/control-click on the preset icon and choose the **Preset Info** command. Information on a preset includes the author's name, copyright notice, date of creation, last modification date and a text description.

4.2.5.6. Locating a Preset in the Browser

It might sometimes be helpful to locate in the preset library the preset currently being played or in other words, that corresponding to the current program. To rapidly locate the current preset in the browser, use the **Locate Program in Browser** command from the **Programs** menu or the Ctrl-L/Apple-L shortcut. The **Locate** command will automatically expand the folder containing the currently used preset and select the preset.

4.2.5.7. Resizing the Browser

In standalone mode, the browser can be resized. In order to change the size of the browser, position the mouse cursor on the line separating the browser from the *Lounge Lizard Session* control panel. When the cursor changes to a double-headed arrow, click-hold and move the mouse to the left or right as desired. In order to hide the browser completely, move the double-headed arrow cursor fully to the left. Note that when *Lounge Lizard Session* is used as a plug-in, the browser size is fixed and can not be modified.

4.2.6. MIDI maps

MIDI maps containing information about MIDI links between the MIDI controllers and the *Lounge Lizard Session* interface can easily be created as will be explained in Section 4.6.2. MIDI maps are represented in the browser with a MIDI connector icon. MIDI maps are treated exactly the same way as presets in the browser and are saved using the **Save MIDI Links** or **Save MIDI Links As** commands from the **File** menu.

4.2.7. Exporting and Importing Presets and MIDI maps

The **Import** and **Export** commands, found in the **File** drop down menu, allow one to easily exchange presets and MIDI maps with other *Lounge Lizard Session* users. This feature can also be used to decrease the number of elements in the browser by archiving older or rarely used ones elsewhere, on CD-R, or a second hard disk for example. Files containing *Lounge Lizard Session* presets and MIDI maps are equivalent in size to short text file, making it easy to send presets to other users via email.

To export a folder, a group of folders, presets or MIDI maps within a folder, select the elements to export in the browser and use the **Export** command from the **File** menu. When the **Export** window appears, choose a file name and a destination location on your hard disk. *Lounge Lizard Session* export files will be saved with an "lls" extension.

Importing presets and MIDI maps is just as easy. Simply click on the **Import** command from the **File** drop down menu, and select the file to import. A new folder will then appear under the

Imports directory in the browser, containing all of the files contained within the imported package. These can then be dragged and dropped to a new folder, or remain in the Imports directory.

4.2.8. Backuping Presets and MIDI maps

There are basically two ways to backup your presets and MIDI maps: exportation and database backup. The database backup is more efficient when there is a large number of elements to backup.

The exportation method consists in using the **Export** command from the **File** menu as explained in section 4.2.7. Once you have exported the elements you wish to archive, just save the export file(s) to your usual backup location or medium.

The second backup method will enable you to archive the entire material present in the browser. The content of the browser, including presets, MIDI maps and folders is saved into a database file. This second backup method simply consists in archiving this file. The database file location is different whether you are working on a Mac OS or Windows system.

- On **Windows** systems:

C:\Documents and Settings\<user>\Application Data\Applied Acoustics Systems\Lounge Lizard Session 3

- On **Mac OS** systems:

<user>/Library/Application Support/Applied Acoustics Systems/Lounge Lizard Session 3

The name of the database file is **LoungeLizardSession.tdb**. In order to archive your database, just copy this file to your usual backup location or medium. In order to restore a database, replace the version of the **LoungeLizardSession.tdb** file with a previously archived one. It is also possible to synchronize different systems by copying this file on different computers where *Lounge Lizard Session* is installed.

4.2.9. Restoring the Factory Presets and MIDI Links

If necessary, it is possible to restore the original factory library and program list by using the **Restore Factory Library** from the **File** menu. This operation makes a backup of your current database file in the preset database folder as explained in Section 4.2.8 and creates a new preset database containing only the factory presets and MIDI maps. The next time you open *Lounge Lizard Session*, both the browser and the program list will be in exactly the same state as when you first installed the application.

Note that restoring the factory library should be done with caution as you will loose all the work you might have saved into the library and that this operation can not be undone easily. If you wish to recuperate a certain number of presets and MIDI maps after restoring the factory library, we recommend that you first export all the material you wish to keep using the **Export** command as explained in Section 4.2.7. After re-installation of the factory library, you will easily be able to re-import this material using the **Import** command.

If you forgot to export material before restoring the factory library or if you wish to bring back the preset library to its state before restoring the factory library, it is still possible to recover material from the backup file of the preset database which was created automatically when restoring the factory library as explained in Section 4.2.8. This method should be considered as a last resort, however, as recovering material from this backup file will remove the factory library which you have just installed and force you to redo the operation. Using the Export command before restoring the factory library is much simpler.

Note that the restore of the factory library is actually performed the next time you re-open the application. It is still possible to cancel this operation before exiting the application by using the **Cancel Library Restore** command from the **File** menu.

4.3. General organization of *Lounge Lizard Session*

The graphical interface of the synthesizer is shown in Figure 8. One can choose from a selection of 4 different pianos and apply different effects to the sound. The effect section includes a **Tremolo** module, a **Drive** module, a Multi-Effect module and a reverb module. A master level control and level meters appear on the lower right corner of the interface.

Figure 8: Interface of the Lounge Lizard Session.

4.3.1. MIDI LED

The red MIDI LED toggles when a MIDI signal is received by the *Lounge Lizard Session*. This is very useful to see if *Lounge Lizard Session* is receiving MIDI signal from your keyboard or other controllers. If the LED does not blink when you play your keyboard, check your connections and the transmit/receive channels you are using or the MIDI settings of *Lounge Lizard Session* as explained in Section 4.6.2.

4.3.2. MIDI Channel Combo Box

Displays the current MIDI channel on which *Lounge Lizard Session* is receiving MIDI information. The channel can be adjusted with the drop down menu from the combo box. In *omni* mode, *Lounge Lizard Session* responds to all MIDI events from all channels. Note that in this configuration, MIDI links from different controllers having the same controller number but different channel numbers become equivalent.

4.3.3. Polyphony Combo Box

Displays the number of voices of polyphony (2 to 32). The number of voices can be adjusted with the drop down menu from the combo box.

4.3.4. General Functioning of an Electric Piano

The electric piano was invented by Harold Rhodes (1910-2000) during the forties when he was in the army. The first instruments he built were made of aircraft pieces and were intended to entertain army servicemen. It became a very popular instrument in jazz and rock and its warm tone still appears in about all new musical styles these days.

The mechanism of the electric piano is, in fact, quite simple and is illustrated in Figure 9. A note played on the keyboard activates a hammer that hits a fork. The sound of that fork is then amplified by a magnetic coil pick up and sent to the output, very much like an electric guitar. The fork is made of two parts: the tine and the tone bar. The tine bar is where the mallet hits the fork.

The *Lounge Lizard* synthesis engine faithfully reproduces the functioning and interaction of these components taking into account their physical and geometrical properties. In the original version of the *Lounge Lizard EP*, the user interface enables one to adjust these properties and get a wide variety of tone colors. In this *Session* edition, these parameters have been adjusted for you in order to model different types of pianos which can be selected from the **Piano** module.

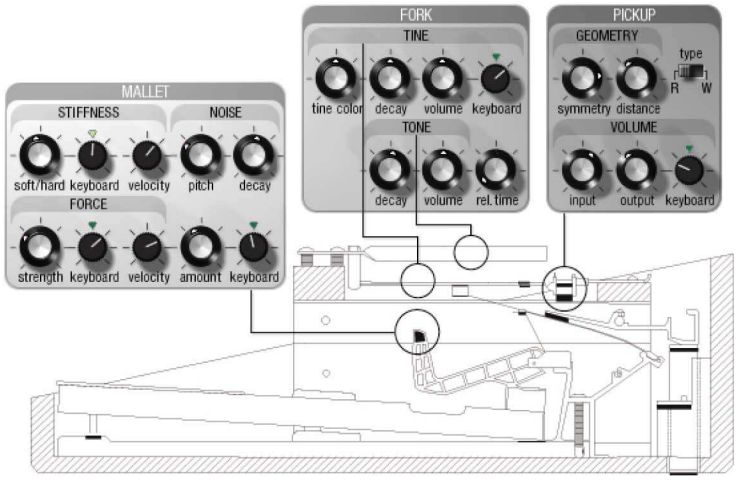


Figure 9: Geometry of an electric piano and corresponding elements on the Lounge Lizard EP interface. Note that this simplified Lounge Lizard Session edition, these interface controls are not accessible.

4.4. Parameters

4.4.1. General Functioning of the Interface

4.4.1.1. Tweaking Knobs

All the knobs on the interface are selected by clicking on them. Once selected, they can be controlled in different ways depending on the effect you want to achieve.

- For coarse adjustment click-hold on a knob and drag the mouse upwards or downwards to move it clockwise or counter-clockwise.
- For fine adjustment, use the left or down arrow of the computer keyboard to move the knob counterclockwise and the right or up arrow to move it clockwise. The **Page Up** and **Page Down** keys give the same result with slightly faster action. Note that this may not work in certain plug-in formats.
- To move a control to a given position, place the mouse at this position and Shift-click/Option-click. To reach this position slowly, do the same, but use the middle button of the mouse (Windows only).
- Knobs with a green LED above can be moved directly to their center position by clicking on the LED.

Remember that the keyboard shortcuts affect only the most recently selected control. The value of the control currently selected is displayed on the toolbar at the top of the *Lounge Lizard Session* window. The number displayed on the counter is a value corresponding to the setting of the control currently selected.

4.4.1.2. Buttons

Buttons are switched *on* or *off* by clicking on them. The value appearing in the toolbar when a button is selected represents the state associated with the position of the button.

4.4.1.3. Drop-down menus and Displays

Clicking on a display with a small down-pointing triangle on its right, such as in the **Reverb** module, reveals a drop-down menu with a set of possible settings for the control. Adjustment of the control is obtained by clicking on a selection or using the up and down arrows and the **Enter** key of the computer keyboard.

4.4.2. The Piano Module

The **Piano** module is used to select the type of piano which will be played. A selection of 4 different instruments is available, three Rhodes-like pianos and a Wurlitzer-like piano. Switching from one instrument to the other is achieved by changing the position of the selector knob.

The reference pitch of the keyboard can be adjusted with the *Tune* knob. When in its center position (green LED *on*), the reference note of the keyboard is A4 set at 440 Hz. Turning this knob counter-clockwise will lower the pitch of this reference note while turning it to the clockwise will increase it. Note that the pitch knob can be set directly to its center position by clicking on the green LED.

4.4.3. The Tremolo Module

The **Tremolo** module, introduces low frequency amplitude modulation, or tremolo, in the sound. This is an effect extensively used with electric pianos. The effect is switched on or off by clicking on the green LED in the upper right corner of the module.

The *stereo* button is used to determine if the tremolo is mono or stereo. When the button is depressed, the tremolo is *on* and in stereo mode. In this mode, the sound bounces with a 180 degrees phase from left to right. When the button is its *off* position, the tremolo is in mono mode and is the same on the left and right channels.

The *Depth* is used to set the amount of modulation in the amplitude of the signal. In its leftmost position, the amplitude is not modulated and turning the knob clockwise gradually increases the amplitude of the modulation.

The *Speed* knob controls the frequency of the modulation. Turning the knob clockwise increases this frequency and results in a faster modulation rate.

4.4.4. Damper

Although it is not visible on its interface, the Lounge Lizard Session engine includes a damper module which simulates the production of noise when dampers are raised from or applied on the fork when a key is depressed or released. This gives a more realistic and lively sound. This **Damper** module responds to the sustain pedal signal via the Damper MIDI Control Change message (CC#64). In order for *Lounge Lizard Session* to respond to a sustain pedal, simply set your synth or MIDI controller to send its sustain pedal signal via this MIDI Control Change message.

4.4.5. The Drive Module

The **Drive** module implements a simple distortion or overdrive effect such as that found in distortion pedals for example.

The *Amount* knob is a gain control used to adjust the level of distortion applied to the the signal. In its leftmost position, almost no distortion is applied to the signal and turning the knob clockwise increased the amount of distortion applied to the signal. The effect is switched on or off by clicking on the green LED in the upper right corner of the module.

4.4.6. The Effect Module

Lounge Lizard Session is equipped with a configurable **Effect** module. Effects are selected using the drop-down menu. The effect list includes chorus, flanger, vibrato, digital delay, ping pong delay, tape delay, phaser, auto wah and wah

wah. All the effects share the same interface except for the labels under the control knobs which vary depending on the effect chosen. This module is switched on or off by clicking on the green LED in the upper right corner of the module.

4.4.7. Chorus

The chorus effects can be controlled with the two knobs appearing at the bottom of the module. The *Depth* knob is used to control the amplitude of the effect while the *Rate* knob is used to fix the modulation frequency of the effect.

4.4.7.1. Flanger

The flanger effects is controlled with the three knobs appearing at the bottom of the module. The *Depth* knob is used to control the amplitude of the effect while the *Rate* knob is used to fix the modulation frequency of the effect.

4.4.7.2. Delay

The **Effect** module includes 3 different types of delay effects: *Ping Pong*, *Digital* and *Tape Delay*. The *Digital* delay consists in a standard delay line with feedback. The tape delay is similar but also includes a low-pass filtering effect in order to simulate the attenuation of high frequencies in analog tape delays. The *Ping Pong* delay is based on two delay lines resulting in a signal traveling from one channel to the other, each time attenuated by a coefficient.

The *Feedback* knob is used to adjust the amount of signal re-injected into the delay lines or in other word the amount of feedback introduced in the line. In its leftmost position, there is no signal re-introduced and the effect module only delays the input signal. Turning this knob clockwise increases the amount of signal reflected back at the end of the line. Finally the *Time* knob controls the length of the delay lines and therefore the delay between echoes.

4.4.7.3. Phaser

The "phasing" effect colors a signal by removing frequency bands from its spectrum. The effect is obtained by changing the phase of the incoming signal and adding this new signal to the original.

The *Depth* knob is used to control the amplitude of the effect while the *Rate* knob is used to fix the modulation frequency of the effect.

4.4.7.4. Wah

The **Effect** module includes 2 different types of wah effects: wah wah, and auto wah. Both of them are based on a specially designed bandpass filter with a 12 dB/oct slope. In the wah wah effect, the center frequency of the bandpass filter varies at a certain rate. In the case of the auto-wah, the variations of the center frequency is controlled by the amplitude envelope of the incoming signal.

The *Depth* knob controls the excursion of the center frequency of the filter. Turning this knob clockwise increases the excursion of the center frequency.

Finally, the *Rate* knob controls the frequency or rate of the modulation of the center frequency of the filter. In the case of the *Wah Wah* effect, turning this knob clockwise increases the rate of the modulation. In the case of the *Auto Wah* filter, this knob controls the time constant of the envelope follower. Turning this knob clockwise decreases the time constant, or in other words the reaction time, of the envelope follower.

4.4.8. Reverb

The **Reverb** module is used to recreate the effect of reflections of sound on the walls of a room or hall. These reflections add space to the sound and make it warmer, deeper, as well as more realistic since we always listen to instruments in

a room and thus with a room effect. The **Reverb** module is switched on or off by clicking on the green LED in the upper right corner of the module.

The *Reverb* drop down menu is used to choose between different reverb algorithms representing different types of rooms or halls. Each algorithm can be adjusted with the knobs located at the bottom of the module. The *Mix* knob is used to set the relative amount of "dry" and "wet" signal which is related to the proximity of the sound source. The *Decay* is used to control the reverberation time of the room.

4.5. Toolbar

The toolbar at the top of the *Lounge Lizard Session* interface allows you to monitor important information related to your current set-up.

4.5.1. Program Display

Displays the number and name of the program currently loaded in the synthesis engine. The + and − buttons on the left of the program number, or alternatively the + and − keys on the computer keyboard, are used to navigate upwards and downwards in the program list. The complete list of 128 programs can be viewed by using the ▾ button located on the left of the program number. When the preset associated with the current program is different from the version saved in the preset library, the preset icon to the left of the buttons changes color in order to indicate that saving is necessary in order not to lose the changes that have been applied.

4.5.2. MIDI map

Displays the name of the currently opened MIDI map. For more information on MIDI maps, please refer to Section 4.6.2.

4.5.3. CPU meter

Displays the percentage of the total CPU resources currently used by *Lounge Lizard Session*.

4.5.4. Value Display

Displays the value of the currently selected control on the interface. The values range from 0 to 127 for knobs and 0 or 1 for buttons depending on whether they are in their *on* or *off* position. For some controls, the value is displayed in the appropriate units.

4.6. Audio and MIDI Settings

This chapter explains how to select the audio and MIDI devices used by *Lounge Lizard Session* as well as how to create and edit MIDI links and MIDI maps. When referring to commands that are different on Windows and Mac OS systems, the commands are listed in the following order: Windows command/Mac OS command.

4.6.1. Audio Settings

4.6.1.1. Selecting an Audio Device

To select the audio device used by *Lounge Lizard Session*:

- Go to the **Audio** menu and choose the **Audio Settings** options. A list of the audio devices installed on your computer will appear in the **Audio Configuration** window.
- Click on the audio device you wish to use and click on the **OK** button.

4.6.1.2. Audio Control Panel

To launch the audio configuration panel, choose **Audio Control Panel** under the **Audio** menu. This command allows you to select the bit depth sample rate (22.05, 44.1, 48, or 96 kHz) and buffer size, which affects how quickly *Lounge Lizard Session* responds to the control information it receives. The smaller the buffer size, the shorter the latency, and vice versa.

On Windows systems using ASIO drivers, this command opens the control panel provided with the driver and the content of the dialog depends on the driver. Some sound cards also require that you close all programs before making changes to the buffer size or sampling rate. If you discover this is the case with your sound card, please refer to the manufacturer's documentation for details on configuring it for optimum performance. Most sound card manufacturers also update their drivers regularly. It is strongly recommended that you visit your sound card manufacturer's website regularly to ensure you are using the most up to date drivers and support software.

On Mac OS systems, this command launches the **Audio MIDI Setup** configuration application.

4.6.2. MIDI Settings

4.6.2.1. Selecting a MIDI Device

To select the MIDI device used by *Lounge Lizard Session*:

- Go to the **MIDI** menu and choose the **MIDI Settings** option. A list of the MIDI devices installed on your computer will appear in the **MIDI Configuration** window.
- Select the MIDI device you want to use and click on the **OK** button.

4.6.2.2. Creating MIDI Links

Every control on the *Lounge Lizard Session* interface can be manipulated by an external MIDI controller. In most cases this is much more convenient than using the mouse, especially if you want to move many controllers at once. For example, you can map the motion of a knob on the interface to a real knob on a knob box or to the modulation wheel from your keyboard. As you use the specified MIDI controllers, you will see the controls move on the *Lounge Lizard Session* interface just as if you had used the mouse.

To assign a MIDI link to a controller:

- On the interface, right-click/Control-click on a control (knob, button), a contextual menu appears. Select **Learn MIDI Link**.
- Move a knob or slider on your MIDI controller (this can be a keyboard, a knob box, or any device that sends MIDI). This will link the control of the *Lounge Lizard Session* to the MIDI controller you just moved.

MIDI links can also be created by right-clicking/Control-clicking on a control and choosing the **Add MIDI Link** command which will open the **Add MIDI Link** window.

4.6.2.3. Editing MIDI Links

MIDI links can be edited in the MIDI Links window, which lists all the currently available MIDI links.

- To edit the MIDI link, right-click/Control-click again on the control and choose **Edit MIDI Link** to open the MIDI links window. You can also use the **Edit MIDI Link** command from the **MIDI** menu.
- Click on the MIDI link you wish to modify and then on the **Edit** button to launch the **EDIT MIDI Link** window.
- Specify the MIDI controller number and MIDI channel of the physical controller you wish to link to the parameter in the corresponding drop-down menus.
- You can also adjust the **Minimum Value** and **Maximum Value** of the controller, which are used to limit the range of MIDI controllers. The **Minimum Value** slider is used to determine the position on the *Lounge Lizard Session* control which corresponds to the minimum value sent by the MIDI controller; the **Maximum Value** slider determines the position which corresponds to the maximum value sent by the MIDI controller. The leftmost position of the slider corresponds to the *Lounge Lizard Session* control minimum position (left position for a knob) while the rightmost position of the slider corresponds to the *Lounge Lizard Session* control maximum position (right position for a knob).
- Note that the range of a knob can be inverted by setting the value of **Maximum Value** to a smaller value than that of **Minimum Value**.
- Click on the **OK** button and the link appears in the list of controllers linked to the control.
- Click on the **OK** button again to confirm the change and to leave the MIDI Links window.
- Note that the **Minimum Value** and **Maximum Value** of a MIDI link can also be set by right/control clicking on the corresponding control and selecting the **Set MIDI Link Minimum Value** or **Set MIDI Link Maximum Value** command. The value corresponding to the control position will then be saved as the minimum or maximum value of the MIDI link.

4.6.2.4. Deleting MIDI Links

To remove a MIDI link, right-click/Control-click again on the control and choose **Forget MIDI Link** or choose the **Forget MIDI Link** command from the **MIDI** menu.

MIDI links can also be removed from the MIDI Links window by clicking on the MIDI link to be removed to select it, then by clicking on the **Remove** button and the **OK** button to confirm the change.

4.6.2.5. Creating a MIDI Map

A set of MIDI links can be saved into a MIDI map by using the **Save MIDI Link As** from the **File** menu. Different MIDI maps corresponding to different MIDI controllers can thereby be saved for *Lounge Lizard Session*. A MIDI map can be loaded by double clicking on the corresponding MIDI connector icon that appears in the browser when a MIDI map is saved. Furthermore a MIDI map can be loaded automatically when an instrument is launched.

- To assign a default MIDI map, right-click/Control-click on the MIDI map icon and choose the **MIDI Link Info** command. In the **Edit Information Window**, select the **Set as default MIDI Links** option.

4.6.2.6. Factory MIDI Map

A factory MIDI map has been created for the different *Lounge Lizard Session* controls. This map, called **Factory MIDI Map**, is set as the default MIDI map when *Lounge Lizard Session* is installed. In this map, the following CC (control change) numbers have been assigned to the different *Lounge Lizard Session* parameters as indicated in Table 1.

Note that it is possible to reload the original version of this MIDI map by importing the factory MIDI maps file as explained in Section 4.2.9.

4.6.2.7. Empty MIDI Map

The factory MIDI maps include a MIDI map called **No MIDI link**. As its name suggest this map is empty. Loading this map deactivates all the MIDI links.

It is possible to reload the original version of this MIDI map by importing the factory MIDI maps file as explained in Section 4.2.9 in case it was modified by mistake.

Parameter	CC number
Piano Type	71
Keyboard Tune	70
Tremolo On/Off	80
Tremolo Mono/Stereo	84
Tremolo Depth	92
Tremolo Speed	79
Drive On/Off	81
Drive Amount	16
Effect On/Off	82
Effect Type	17
Effect Depth	12
Effect Rate	13
Reverb On/Off	83
Reverb Type	18
Effect Amount	91
Effect Decay	75
Volume	19

Table 1: Factory CC numbers for the Lounge Lizard Session parameters

4.6.2.8. Defining a Default MIDI map

It is possible to define a default MIDI map that will be loaded automatically when *Lounge Lizard Session* is launched.

- First select a MIDI map by clicking on its icon in the browser and choose the **MIDI Link Info** command from the **Edit** or the Ctrl-I/Apple-I keyboard shortcut. One can also right-click/control-click on the MIDI map icon and choose the **MIDI Link Info** command.
- To change the default MIDI map select the **Mark As Default** option.

4.6.2.9. MIDI Program Changes

MIDI program changes can be used to switch between programs while playing. Lounge Lizard Session will change the number of the current program used by the synthesis engine to the number corresponding to the MIDI program change received by the application.

4.6.3. Latency Settings

The latency is the time delay between the moment you send a control signal to your computer (for example when you hit a key on your MIDI keyboard) and the moment when you hear the effect. Roughly, the latency will be equal to the duration of the buffers used by the application and the sound card to play audio and MIDI. To calculate the total time required to play a buffer, just divide the number of samples per buffer by the sampling frequency. For example, 256 samples played at 48 kHz represent a time of 5.3 ms. Doubling the number of samples and keeping the sampling frequency constant will double this time while changing the sampling frequency to 96 kHz and keeping the buffer size constant will reduce the latency to 2.7 ms.

It is of course desirable to have as little latency as possible. *Lounge Lizard Session* however requires a certain amount of time to be able to calculate sound samples in a continuous manner. This time depends on the power of your computer, the preset played, the sampling rate, and the number of voices of polyphony used. Note that it will literally take twice as much CPU power to process audio at a sampling rate of 96 kHz as it would to process the same data at 48 kHz, simply because you need to calculate twice as many samples in the same amount of time.

Depending on your machine you should choose, for a given sampling frequency, the smallest buffer size that allows you to keep real-time for a reasonable number of voices of polyphony.

To adjust these parameters:

- Launch the Audio Control Panel
- Choose the sampling frequency and the audio format (16, 24, 32 bits)
- Adjust the buffer size

Note that this might not be possible on Mac OS or with ASIO drivers on Windows.

In order to optimize the resources allocated to the calculation of audio by *Lounge Lizard Session*, it is possible to decrease the ratio of resources devoted to the calculation of graphics for the interface in favor of audio related calculations. To adjust this ratio, choose the **Preferences** command under the **Edit** menu and adjust the *Performance* slider to the desired value between **better audio performance** and **smoother graphics**. This setting may have little noticeable effect on recent computers.

4.7. Using the *Lounge Lizard Session* as a Plug-In

Lounge Lizard Session is available in VST, DXi, AudioUnit and RTAS (for Mac OS only) formats and integrates seamlessly into the industry most popular multi-track recording and sequencing environments as a virtual instrument plug-in. The plug-in versions will work exactly the same way as the standalone version, except for the audio, MIDI, and latency configurations that will be taken care of by the host sequencer. Furthermore *Lounge Lizard Session* works as any other plug-in in these environments so we recommend that you refer to your sequencer documentation in case you have problems running *Lounge Lizard Session* as a plug-in. We review here some general points to keep in mind when using a plug-in version of *Lounge Lizard Session*.

4.7.1. Window Size

The size of the *Lounge Lizard Session* window is fixed when it is used as a plug-in.

4.7.2. Audio and MIDI parameters

When *Lounge Lizard Session* is used as a plug-in, the audio and MIDI ports, sampling rate, buffer size, and audio format are determined by the host sequencer.

4.7.3. Automation

Lounge Lizard Session supports automation functions of host sequencers. Automation can usually be done by using MIDI links and recording MIDI events, or by recording the motion of controls on the interface.

4.7.4. Multiple Instances

Multiple instances of *Lounge Lizard Session* can be launched simultaneously in a host sequencer.

4.7.5. Saving Projects

When saving a project in a host sequencer, the program list is saved with the project in order to make sure that the instrument will be in the same state as when you saved the project when you re-open it even if the preset library of the instrument was modified. MIDI links are also saved.

Note that the default program list (the same as that loaded in standalone mode) appears when Lounge Lizard Session is opened in a new project or if a new instance of the plug-in is opened in an existing project. To change the default program list, use the **Save All Programs** command from the **Programs** menu in an instance of the instrument which displays the desired program list.

4.7.6. MIDI channel

Make sure that the MIDI controller, sequencer and *Lounge Lizard Session* all use the same MIDI channel. If you are not certain of the channel used by your controller or sequencer, set the MIDI channel of *Lounge Lizard Session* to *Omni*.

4.7.7. MIDI program change

MIDI program changes are supported in the plug-in versions of *Lounge Lizard Session*. When a MIDI program change is received by the application, the current program used by the synthesis engine is changed to that having the same number as that of the MIDI program change message.

4.7.8. Performance

Using a plug-in in a host sequencer requires CPU processing for both applications. The load on the CPU is even higher when multiple instances of a plug-in or numerous different plug-ins are used. To decrease CPU usage, remember that you can use the **freeze** of **bounce to track** functions of the host sequencer in order to render to audio the part played by a plug-in instead of recalculating it every time it is played.

4.8. Quick reference to commands and shortcut

4.8.1. File Menu

Command	Windows	Mac OS	Description
New Folder…		Apple+Shift+N	New Folder in the Browser
Open Preset	Ctrl+O	Apple+Option+O	Open the selected preset
Save Preset	Ctrl+S	Apple+S	Save the current preset
Save Preset As…			Save the current preset under a new name

Save MIDI Links	Ctrl+Shift+S	Apple+Shift+S	Save the current MIDI links
Save MIDI Links As…			Save the current MIDI links under a new name
Import…			Import a **.lls** file
Export…			Export a **.lls** file
Restore Factory Library…			Restore factory library and programs. Everything else in the browser is deleted
Exit (Quit on Mac)			Quit the application

4.8.2. Edit Menu

Command	Windows	Mac OS	Description
Undo	Ctrl+Z	Apple+Z	Undo last command
Redo	Ctrl+Y	Apple+Shift+Z	Redo last command
Copy	Ctrl+C	Apple+C	Copy selected item
Paste	Ctrl+V	Apple+V	Paste
Delete	Del		Delete selected item
Info…	Ctrl-I	Apple+I	Edit information about a selected item (browser)
Compare			Compare modified preset with original settings
Preferences			Display the Edit Genera

4.8.3. Audio

Command	Windows	Mac OS	Description
Audio Settings			Display the Audio Settings window
Audio Control Panel			Display the Latency Settings window if DirectSound is used, the ASIO control panel when ASIO drivers are used and the Audio MIDI setup configuration tool on Mac OS systems

4.8.4. MIDI

Command	Windows	MacOS	Description
MIDI Settings			Display the MIDI Settings window
Learn MIDI Link			MIDI link learn mode for the last control touched
Add MIDI Link			Enables one to add a MIDI link on the last controlled touched
Forget MIDI Link			Drop a MIDI link
Set MIDI Link Minimum Value			Limit the value of a MIDI link to a minimum value
Set MIDI Link Maximum Value			Limit the value of a MIDI link to a maximum value
Edit MIDI links			Display the Edit MIDI links window

Edit Program Changes…	Associate presets with MIDI program changes
All Notes Off	Send an all note off signal

4.8.5. Programs Menu

Command	Windows	MacOS	Description
Locate Program in Browser	Ctrl-L	Apple-L	Locate the current program in the browser and select it
Rename Program	Ctrl-R	Apple-R	Rename the current program in the program list
Switch to Program	Ctrl-P	Apple-P	Change the current program
Save All Programs			Save the entire program list including modifications to programs. The list will be in exactly the same state the next time you open the application

4.8.6. Help Menu

Command	Windows	MacOS	Description
About Lounge Lizard Session…			Display the About Lounge Lizard Session window
User Manual	F1		Display the user manual
Authorize Lounge Lizard Session…			Display the Authorization window. Active only if the application has not been authorized.
Visit www.applied-acoustics.com...			Launch the browser and go to the AAS website.
Join the user forum…			Launch the browser and go to the AAS forum.
Get support…			Launch the browser and go to the support section of the AAS website.
Upgrade to the Lounge Lizard EP…			Launch the browser and go to the Lounge Lizard EP upgrade section of the AAS website

4.9. License Agreement

IMPORTANT! CAREFULLY READ ALL THE TERMS AND CONDITIONS OF THIS AGREEMENT BEFORE OPENING THIS PACKAGE. OPENING THIS PACKAGE INDICATES YOUR ACCEPTANCE OF THESE TERMS AND CONDITIONS. IF YOU DO NOT AGREE WITH THE TERMS AND CONDITIONS OF THIS AGREEMENT, PROMPTLY RETURN THE UNOPENED PACKAGE AND ALL COMPONENTS THERETO TO THE PARTY FROM WHOM IT WAS ACQUIRED, FOR A FULL REFUND OF ANY CONSIDERATION PAID.

This software program, any printed materials, any on-line or electronic documentation, and any and all copies of such software program and materials (the "**Software**") are the copyrighted work of Applied Acoustics Systems DVM Inc. ("**AAS**"), its subsidiaries, licensors and/or its suppliers.

LICENSE TO USE. The Licensee is granted a personal, non-exclusive and non-transferable license to install and to use one copy of the Software on a single computer solely for the personal use of the Licensee. Use of the Software is subject to this Agreement.

RESTRICTIONS ON USE. The Licensee may not nor permit third parties to (i) make copies of any portion of the Software, other than as expressly permitted under this Agreement; (ii) modify, translate, disassemble, decompile, reverse engineer or create derivative and/or competitive products based on any portion of the Software; (iii) provide use of the Software in a network, timesharing, interactive cable television, multiple CPU service bureau or multiple user arrangement to users not individually licensed by AAS, other than as expressly permitted by the terms of this license. The Software is licensed to you as a single product. Its component parts may not be separated for use on more than one computer.

OWNERSHIP. AAS retains title to the Software, including but not limited to any titles, computer code, themes, objects dialog concepts, artwork, animations, sounds, audio effects, methods of operation, moral rights, any related documentation and "applets" incorporated into the Software. AAS retains ownership of and title to all intellectual property rights in the Software, underlying technology, related written materials, logos, names and other support materials furnished either with the Software or as a result of this Agreement, including but not limited to trade secrets, patents, trademarks and copyrights therein. Licensee shall not remove or alter any copyright or other proprietary rights notices contained on or within the Software and shall reproduce such notices on all copies thereof permitted under this Agreement or associated documentation.

LIMITED WARRANTY. Except for the foregoing, THE SOFTWARE IS provided "AS IS" without warranty or condition of any kind. AAS disclaims all warranties or conditions, written or oral, statutory, express or implied, including but not limited to the implied warranties of merchantable quality or fitness for a particular purpose, title and non-infringement of rights of any other person. AAS does not warrant that THE SOFTWARE will meet the Licensee's requirements or that the operation of the software will be uninterrupted or ERROR-FREE.

LIMITATION OF LIABILITY. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT WILL AAS BE LIABLE TO THE LICENSEE OR ANY THIRD PARTY FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR EXEMPLARY DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOSS OF REVENUE OR PROFIT, LOST OR DAMAGED DATA, BUSINESS INTERRUPTION OR ANY OTHER PECUNIARY LOSS WHETHER BASED IN CONTRACT, TORT OR OTHER CAUSE OF ACTION, EVEN IF AAS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, EXCEPT IN RELATION TO GROSS NEGLIGENCE OR WILFUL BREACH OF THIS AGREEMENT BY AAS. NO AAS AGENT, REPRESENTATIVE OR DEALER IS AUTHORIZED TO EXTEND, MODIFY OR ADD TO THIS WARRANTY ON BEHALF OF AAS. THE TOTAL LIABILITY OF AAS FOR DAMAGES, WHETHER IN CONTRACT OR TORT, UNDER OR RELATED IN ANY WAY TO THIS AGREEMENT SHALL BE LIMITED TO THE LICENSE FEES ACTUALLY PAID BY LICENSEE TO AAS, OR IF NO FEES WERE PAID, AAS' LIST PRICE FOR THE SOFTWARE COVERED BY THIS LICENSE. THE EXCLUSION OF IMPLIED WARRANTIES AND/OR THE LIMITATION OF LIABILITY IS NOT PERMITTED IN SOME JURISDICTIONS, AND SOME OR ALL OF THESE EXCLUSIONS MAY THEREFORE NOT APPLY.

TERMINATION. This License also shall extend to the Software and any updates or new releases thereof obtained by the Licensee, if any, subject to any changes to this License made by AAS from time to time and provided to the Licensee, provided AAS is under a separate obligation to provide to Licensee such updates or upgrades and Licensee continues to have a valid license which is in effect at the time of receipt of each such update or new release. This License shall remain in effect until terminated. The Licensee may terminate this Agreement at any time, upon notification to AAS. This Agreement will terminate immediately without notice from AAS if the Licensee fails to comply with any provision of this License. Any such termination by AAS shall be in addition to and without prejudice to such rights and remedies as may be available, including injunction and other equitable remedies. Upon receipt of notice of termination from AAS, the Licensee must (a) immediately cease to use the Software; (b) destroy all copies of the Software, as well as copies of all documentation, specifications and magnetic media relating thereto in Licensee's possession or control; and (c)

return all original versions of the Software and associated documentation. The provisions of Sections 1, 3, and 5 shall survive the termination of this Agreement.

GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the Province of Quebec, without regard to the United Nations Convention On Contracts for the International Sale of Goods and conflict of laws provisions, if applicable, and the parties hereby irrevocably attorn to the jurisdiction of the courts of that province. Les parties sont d'accord à ce que cette convention soit rédigée en langue anglaise. The parties have agreed that this agreement be drafted in the English language.

SEVERABILITY. If any of the above provisions are held to be illegal, invalid or unenforceable, such provision shall be severed from this Agreement and this Agreement shall not be rendered inoperative but the remaining provisions shall continue in full force and effect.

ENTIRE AGREEMENT. This Agreement is the entire agreement between AAS and the Licensee relating to the Software and: (i) supersedes all prior or contemporaneous oral or written communications, proposals and representations with respect to its subject matter; and (ii) prevails over any conflicting or additional terms of any quote, order, acknowledgment, or similar communication between the parties during the term of this Agreement except as otherwise expressly agreed by the parties. No modification to the Agreement will be binding, unless in writing and signed by a duly authorized representative of each party.

NON-WAIVER. No delay or failure to take any action or exercise any rights under this Agreement shall constitute a waiver or consent unless expressly waived or consented to in writing by a duly authorized representative of AAS. A waiver of any event does not apply to any other event, even if in relation to the same subject-matter.