USER'S MANUAL

ANALOG FACTORY | 2.5

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32 ANALOG EXPERIENCE
32 THE FACTORY

Arturia©
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Thank you for purchasing Arturia's Analog Factory 2.5 / Analog Experience "The Factory"!

This manual concerns two distinctive products:

- *Analog Factory 2.5*, a software allowing to play and modify 3500 synthesizer sounds.
- *Analog Experience "The Factory"*, a bundle of Analog Factory 2.5 along with a dedicated control keyboard, the Analog Factory Keyboard.

In this package you will find:

- A CD-ROM containing the Analog Factory 2.5 installer for Mac OS X and Windows XP/Vista/Seven
- A registration card (credit card format) including the Soft-eLicenser activation code and Arturia's online registration code (license number).
- The User's Manual for the Analog Factory 2.5 software and the Analog Factory Keyboard.
- An Analog Factory Keyboard *(Analog Experience "The Factory" only)*
- An USB cable *(Analog Experience "The Factory" only)*

Carefully store your registration card !

In order to actually use the software, you have to register, then authorize, your virtual instrument. By registering, you identify yourself as the legitimate owner and thus will be sure to receive the latest news and updates for your instrument.

The Serial Number and Unlock Code are required to register & authorize Analog Factory 2.5, so these codes are the real value of your product.

See chapter 3 for more information about the authorization process.

Special Message Section

The MIDI keyboard uses USB or an external power adapter. Do not connect this product with any power supply or adapter than the one described on this manual specifically recommended by Arturia. (See Power supply for more details)

WARNING:

Do not place this product in a place or position where one might walk on, trip over or roll anything over power or connecting cords.

The use of an extension cord is not recommended! If you must use one, make sure that the cord has the ability to handle maximum current needed by this product. Please consult a local electrician for more information on your power requirements.

This product should be used only with the components supplied or recommended by Arturia. When used with any components, please observe all safety markings and instructions that accompany the accessory products.

SPECIFICATIONS SUBJECT TO CHANGE:

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

IMPORTANT:

Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, damages, fire or other risks.

The product used either alone or in combination with an amplifier, headphones or speakers, may be able to produce sound levels that could cause permanent hearing loss. DO NOT operate for long periods of time at a high level or at a level that is uncomfortable.
If you encounter any hearing loss or ringing in the ears, you should consult an audiologist.

NOTICE:

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

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

1. Read and understand all the instructions.
2. Always follow the instructions on the instrument.
3. Before cleaning the instrument, always remove the electrical plug from the outlet, as well as the USB cable. When cleaning, use a soft and dry cloth. Do not use gasoline, alcohol, acetone, turpentine or any other organic solutions; do not use liquid cleaner, spray or cloth that's too wet.

4. Do not use the instrument near water or moisture, such as a bathtub, sink, swimming pool or similar place.
5. Do not place the instrument in an unstable position where it might accidentally fall over.
6. Do not place heavy objects on the instrument. Do not block openings or vents of the instrument; these locations are used for air circulation to prevent the instrument from overheating. Do not place the instrument near heat vent or any place of poor air circulation.
7. Only use the recommended specified AC adaptor (12V DC 500mA)
8. Make sure the line voltage in your location matches the input voltage specified on the AC power adaptor.
9. Do not open and insert anything into the instrument which may cause a fire or electrical shock.
10. Do not spill any kind of liquid onto the instrument.
11. Always take the instrument to a qualified service center. You will invalidate your warranty if you open and remove the cover, and improper assembly may cause electrical shock or other malfunctions.
12. Do not use the instrument with thunder and lightening present; otherwise it may cause long distance electrical shock.
13. Do not expose the instrument to hot sunlight.
14. Do not use the instrument when there is a gas leak nearby.
15. Arturia is not responsible for any damage or data loss caused by improper operations to the instrument.

HANDLING CD-ROMS:

Avoid touching or scratching the shiny underside (encoded surface) of the disc. Damaged or dirty CD-ROM disc may not be read properly. Keep your CD-ROMs clean, using a commercially available CD cleaner.

Table of Contents

1 INTRODUCTION

1.1 History

In early 2001, Arturia began working on advanced algorithms for the digital emulation of analog circuit audio characteristics. They are known as TAE®, standing for True Analog Emulation. 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, and 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'll get an idea of what the CS-80V is capable of.

Released at the NAMM 2004, the Minimoog V was our 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 thanks to 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 sounds have been made with the Arp.

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

And finally, at the summer 2007 NAMM Show, Arturia launched the Jupiter-8V. In terms of sonic possibilities, it complemented its "Arturia siblings" by bringing something different. The Jupiter-8 V was capable of creating very versatile sounds. You could easily make 'fat' or 'Crystal' sounds with it. In fact, the Jupiter-8 sounded the way it looked, 'sleek and polished'.

The electro-pop community became quickly convinced by the qualities of the original Jupiter-8. 'Relax', by Frankie Goes to Hollywood was produced incorporating a Jupiter 8, and players such Vince Clarke, John Foxx, and Martyn Ware also used it abundantly. The path to classic status of the Jupiter started there.

Other artists that have used The Jupiter-8 include: Howard Jones, Tangerine Dream, Underworld, Jean Michel Jarre, Depeche Mode, Prince, Gary Wright, Adrian Lee, Heaven 17, Kitaro, Elvis Costello, Tears for Fears, Huey Lewis and the News, Journey, Moog Cookbook, Yes, Devo, Freddy Fresh, Simple Minds, Jan Hammer and BT.

1.2 Here and Now

Analog Factory 2.5 brings you the full 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: the great bass of the Moog Modular, the brass and strings of the Prophet, the pads and FX of the ARP 2600, etc.

If you have never played a real synth, or even if you don't know what a synthesizer is, it doesn't matter; you will be glad to have invested in such a powerful instrument once you hear the difference Analog Factory 2.5 makes in your studio.

1.3 TAE®

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

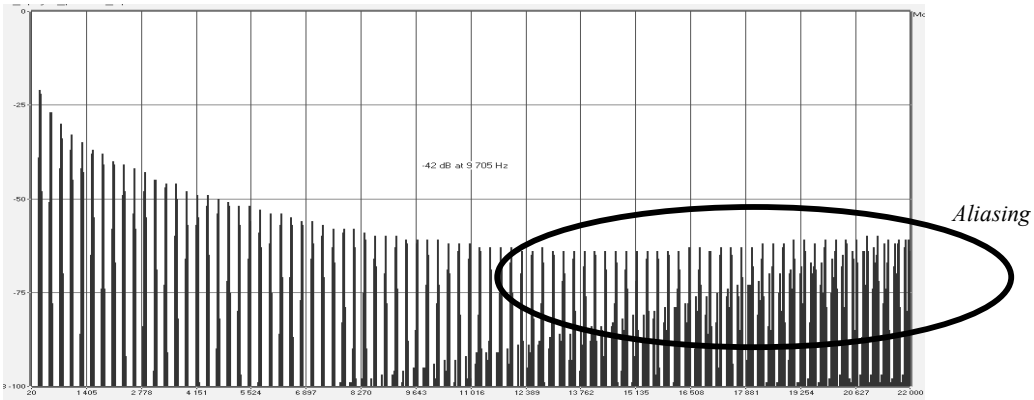
When implemented in software code, TAE®'s algorithms guarantee authentic emulation of hardware specifications. This is why Analog Factory 2.5, and all of Arturia's virtual synthesizers, offer an unparalleled quality of sound.

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

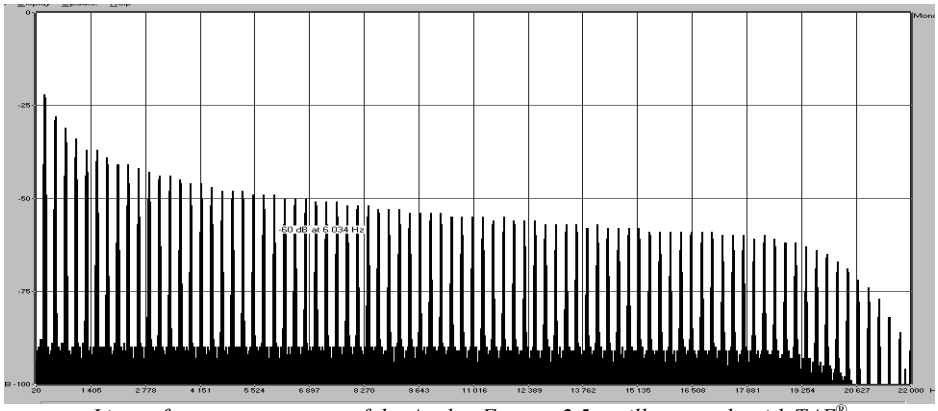
1.3.1 Aliasing-free oscillators

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

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



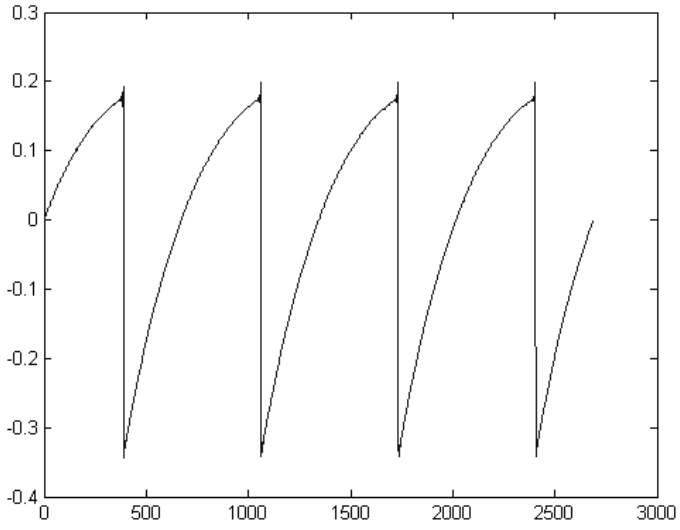
Linear frequency Spectrum of an existing well-known software synthesizer



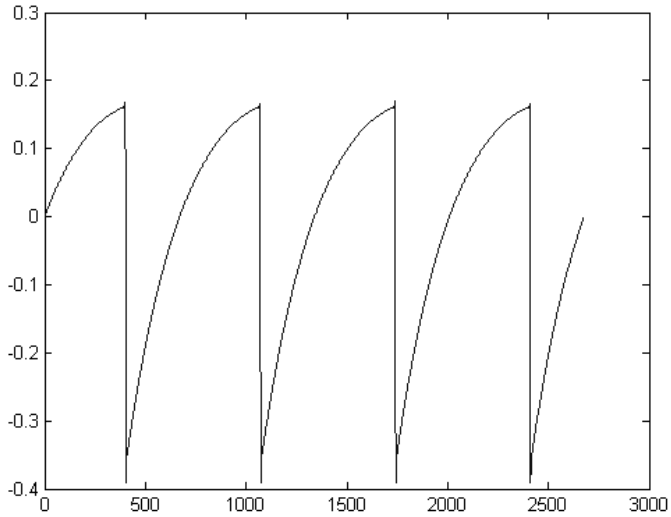
Linear frequency spectrum of the Analog Factory 2.5 oscillator made with TAE®

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® reproduces the result of this capacitor discharge in software. This is the analysis of a waveform from one of the 5 original instruments that Arturia's software emulates, followed by one made by Analog Factory 2.5. They are both equally deformed by the low-pass and high—pass filtering.



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



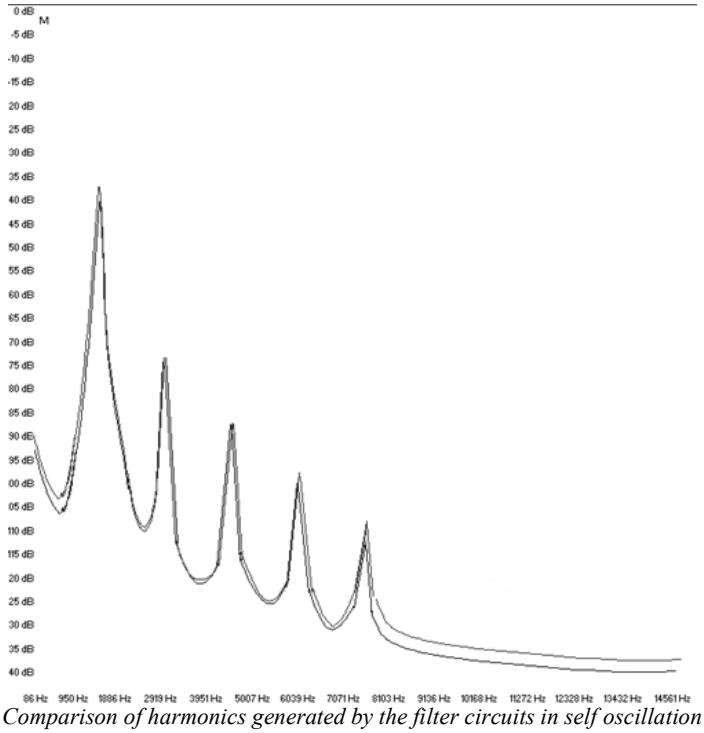
Temporal representation of a "saw tooth" waveform reproduced by TAE®

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 see why vintage synthesizers have such a typical sound.

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

1.3.3 Direct Filter Circuit Modeling

Due to advances in computer processing power, Analog Factory 2.5 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 filters and are due to the non-linear behavior inherent to 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 in self oscillation of Analog Factory 2.5 and a hardware synthesizer

2 INSTALLATION

2.1 Windows installation (XP/VISTA/7)

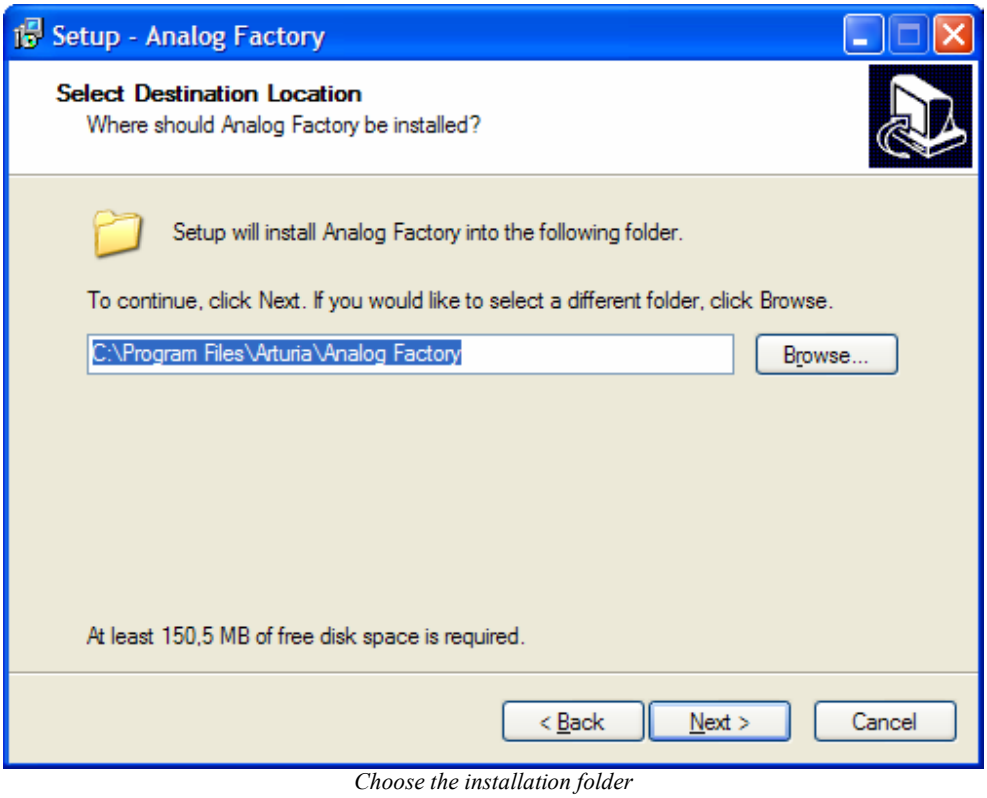
Insert the CD-ROM into the drive. Explore the contents of the CD-ROM, double click on the icon named **`Analog Factory 2.5 Setup.exe`**.

At the first step of the installation, choose the destination folder for the Analog Factory 2.5 installation. By default, it will be installed in this location:

`C:\Program Files\Arturia\Analog Factory 2.5`

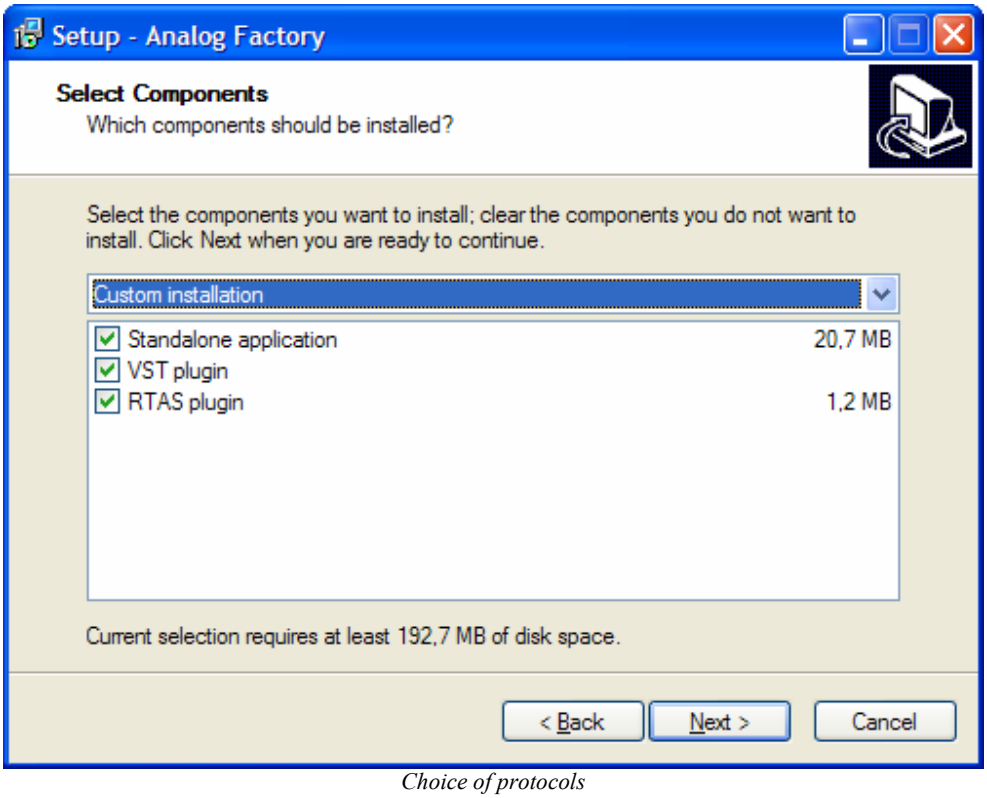
You can change the destination with the Browse button.

If you own a previous version, this version will be overwritten.



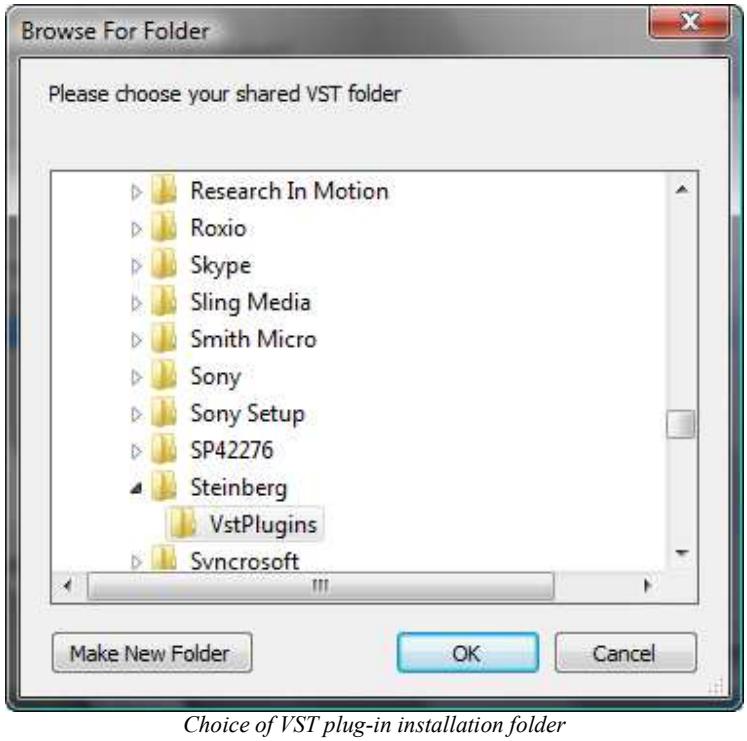
Choose the installation folder

Analog Factory 2.5 will be installed as a standalone application. The following stage will let you choose to install Analog Factory 2.5 as a plug-in. To do this, choose the protocol(s) that you wish to use (VST or RTAS). For more information on these protocols, go to Chapter 9.



Choice of protocols

For the VST protocol, you must choose an installation folder in order for the host application to use Analog Factory 2.5 as a plug-in. If you do not know how to make this choice, go to Chapter 8.



Choice of VST plug-in installation folder

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

2.2 MAC OS X installation

Insert the CD-ROM into the drive. Explore the content of the CD-ROM, then double-click on the icon named Analog Factory 2.5 Setup Mac.

Follow these steps:

- read and accept the End User License Agreement,
- select a destination.

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

Authentication window

Analog Factory 2.5 will next be installed as a standalone application, but also as VST, AU and RTAS plug-ins.

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

3 AUTHORIZATION

Now that your Analog Factory 2.5 has been installed, you have to authorize the synthesizer.

This doesn't apply to owners of the previous 1.x version, who may use the software right away using their USB-eLicenser hardware dongle.

Contrary to 1.x versions that used the USB-eLicenser protection scheme, Analog Factory 2.x uses the "Soft-eLicenser" virtual dongle solution by default. Avoiding the use of a USB port, this system allows using the synthesizer on one machine which must be connected to the Internet during the authorization process.

To transfer your license on another computer, or simply use Analog Factory 2.5 on several computers (one instance at a time), you will need:
- to use one USB-eLicenser hardware dongle (sold separately, also used by many other software editors);
- in the eLicenser Control Center, to drag-and-drop your license from Soft-eLicenser to USB-eLicenser.
This transfer, requiring a valid Internet connection, can be done both ways:
- from Soft-eLicenser to USB-eLicenser;
- from USB-eLicenser to Soft-eLicenser.
Please check the eLicenser documentation installed on your computer for any further technical details.

The first step is to register your software in order to obtain the activation code that will enable you to actually use the software.

You should have handy the license serial number of Analog Factory 2.5 and the unlock code (these are integral part of the software and are printed on a small plastic card)

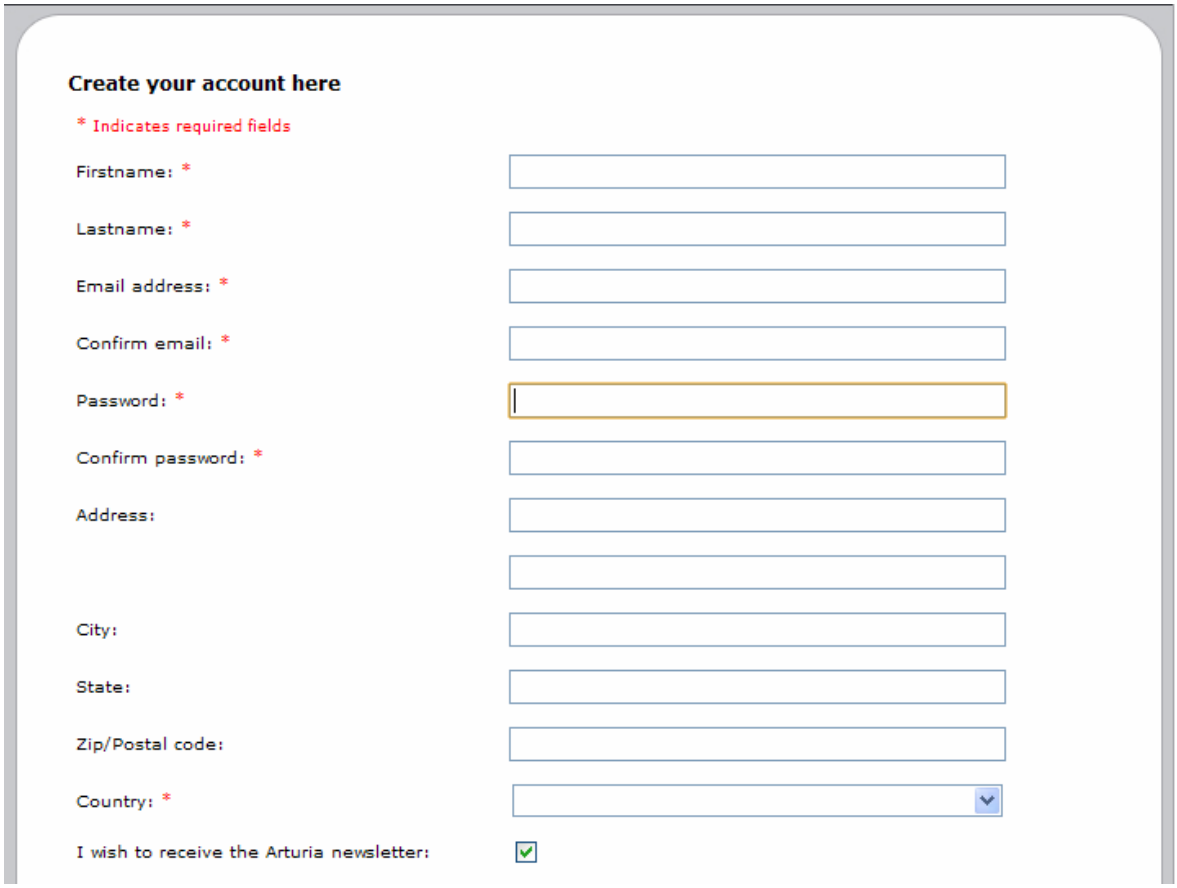
Connect your computer to the Internet, and go to this web page:

http://www.arturia.com/login

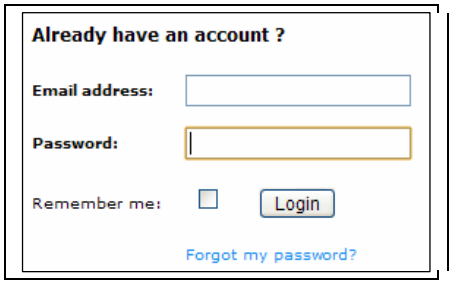
If you don't have any Arturia account yet, please create one now:

Want to create an account* ? Click here

This will take you to this form:



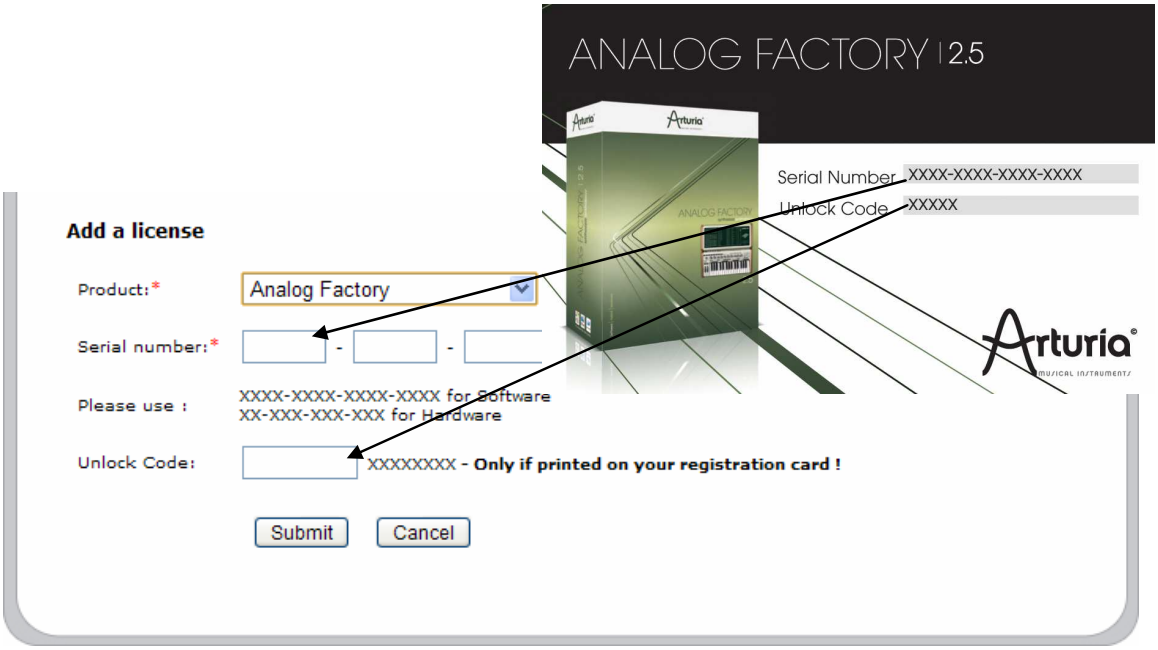
If you already have an account made, simply log in:



Once you are logged into your account, you can register your Analog Factory 2.5 and request your activation code.

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

In the form that appears, select "Analog Factory" from the drop down menu, and key in your synthesizer serial number and unlock code (as written on the registration card):



You should then see the confirmation screen:

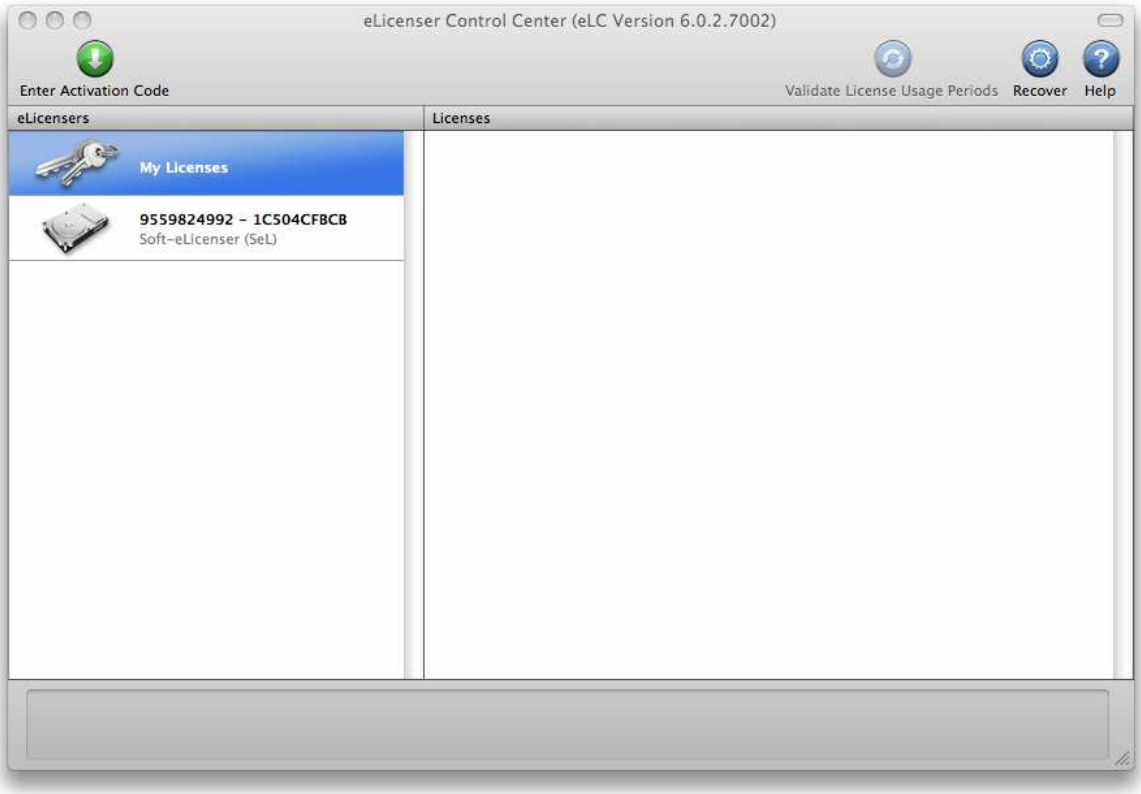
And finally there is a screen from which you can copy the **eLicenser activation code**. The very same information is sent to you by email as a backup.

Now that you have retrieved the activation code, launch the eLicenser Control Center. This application has been automatically installed on your computer along the Analog Factory 2.5, it is accessible there:

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

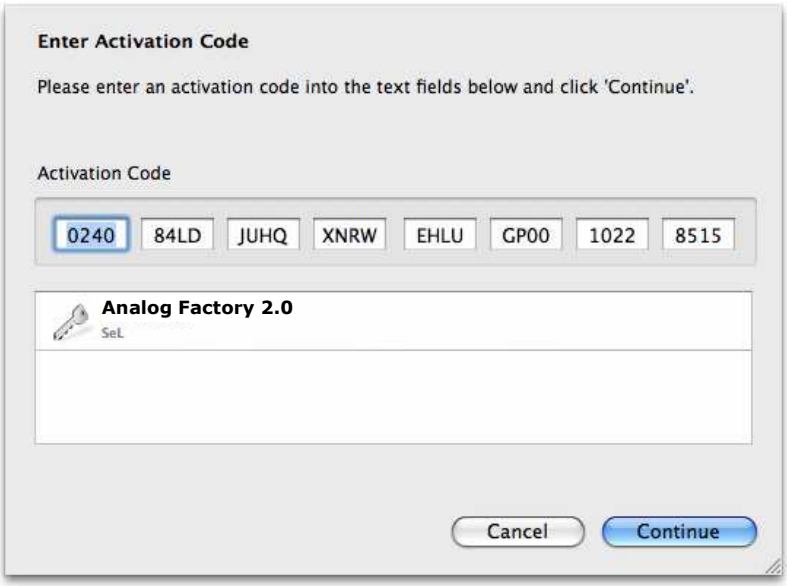
⚠ *The hereunder screenshots have been taken under a Mac OS X running computer; however the process is strictly identical under a machine running Windows XP/Vista/7. The same functions apply, only the graphical user interface differs, and possibly also the language used. These small details should not prevent you from understanding the full process.*

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



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

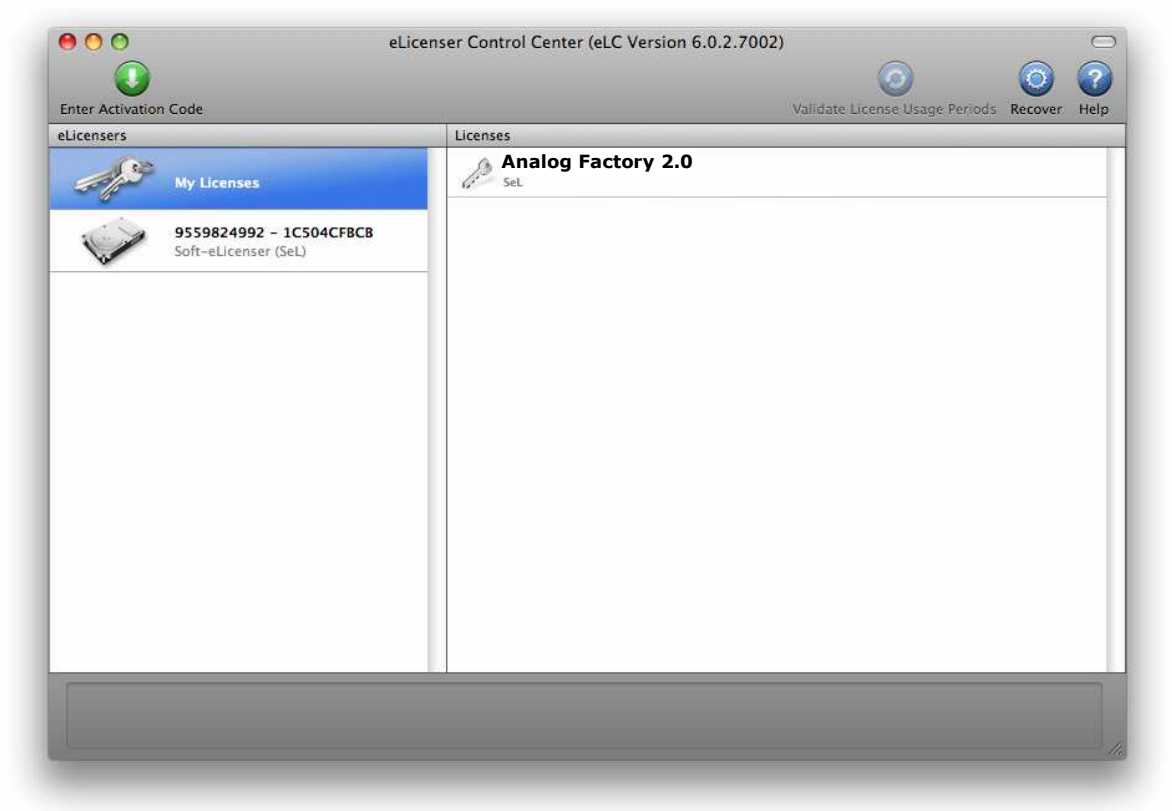
In the eLicenser Control Center menu, click on the "Enter Activation Code" button, and enter the code when prompted. Simply paste in the 32-digit code you've just copied from your account on the ARTURIA website:



Enter the activation code

The eLicenser Control Center is now ready to download the software license that will allow you to use Analog Factory 2.5. Click on Start, the progress bar should advance until downloading is complete. A popup window will confirm completion, just click "Close".

Now the main eLicenser Control Center window should show your Analog Factory 2.5 license installed and activated.



License is installed and activated

It's now time to launch Analog Factory 2.5.

4 USING ANALOG FACTORY 2.5

4.1 Preferences

The "Preferences" window

Preferences are set by clicking on the ***Analog Factory 2.5*** logo on the virtual keyboard.

The following options are available:

LCD COLOR	This function offers a choice between several available colors/combinations on the Preset Manager screen.
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 remains idle on 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**.
SHOW ASSIGNATION LCDS	Toggles the display of the small label screens showing the current key parameter knob assignments.

4.2 Tool Bar

Tool Bar

The tool bar consists of a set of essential icons, organized from left to right, allowing the user to see or 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 and not 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 foundations of the instrument remain intact, it is not possible to save or delete a Factory Preset (Presets that come installed with the software). However, the Save As function allows the modification and saving of a Preset under another name that the user chooses.*

SAVE
Save changes to the current 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 to 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(s) being imported have the same name as existing Presets, the following options will appear:

- "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.

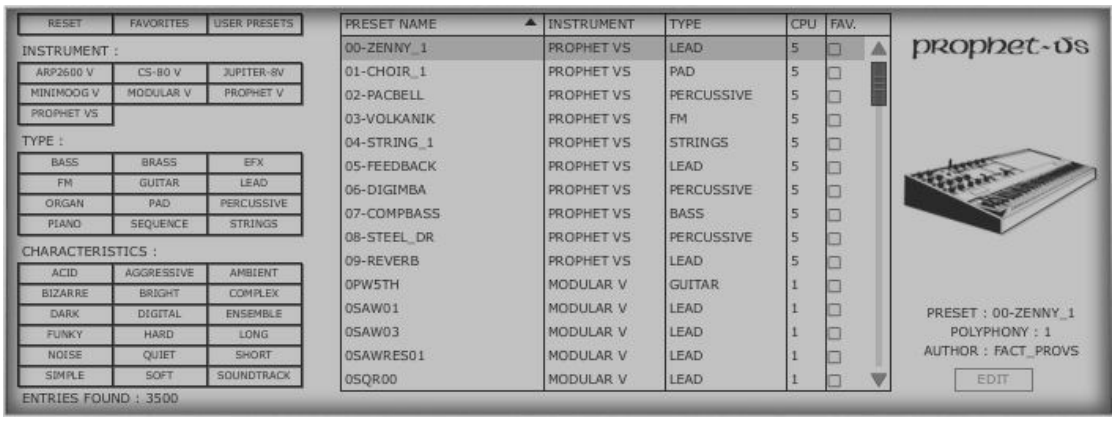
⚠ *So that the foundation of Analog Factory remains intact, it is not possible to Import/Export Factory Presets.*

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 global 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.

4.3 Using the Preset Manager

Presets account for the various sounds of Analog Factory: there are 3500 of them! A preset contains all the setting information of the different controllers necessary to reproduce a sound. In Analog Factory, there are various ways in which the Presets are classified and filtered in order to simplify preset management and find the appropriate sounds for a song; one won't have to search 3500 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 us take a moment to look at each.



Preset Manager

4.3.1 Instrument

"Instrument" refers to one of the 7 instruments from which Analog Factory draws its sound. The instruments include:

- Moog Modular V
- CS-80 V
- Minimoog V
- ARP 2600 V
- Prophet V

- Prophet VS
- Jupiter-8V

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 ARP 2600 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.

4.3.2 Type

"Type" refers to instrument type being synthesized. Just as in the above example, one may select "Type" only in order 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 ARP 2600 V in the Instruments filter. The Preset Manager will then offer a list fulfilling only the above criteria.

4.3.3 Characteristics

To further filter 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
- Funky

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

4.3.4 Entries Found

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

4.3.5 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 (see 3.2.7). 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 exclusively among presets created by the user.

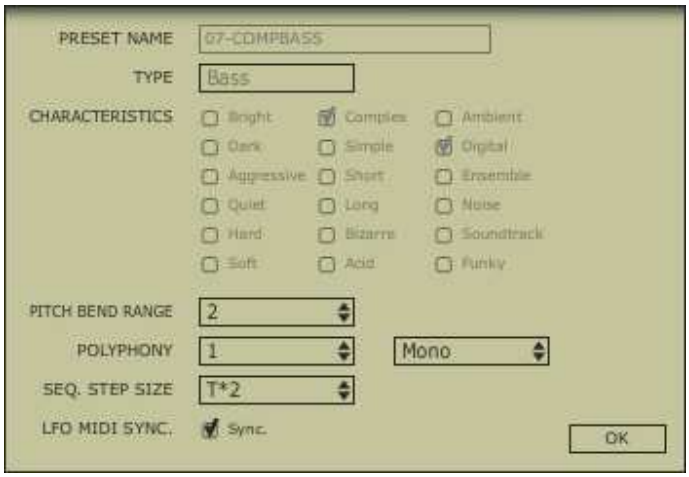
4.3.6 Current Preset Information

Identity Card

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	The number of available voices for the current preset.

EDIT If the selected preset 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 (one must simply click in the boxes corresponding to the 18 possible options: Bright, Dark, Aggressive, Quiet, Hard, Soft, etc.).



EDIT Preset window

4.3.7 Organization

In addition to the Preset Filters that help the user easily search and select among the 3500 various presets, there are also view options within the Preset Manager that allows 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 V, Moog Modular V, ARP 2600 V, CS-80 V, Prophet 5**,** Prophet VS or Jupiter-8V. When the user clicks on the title bar labelled 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 labelled CPU at the top of this column, the presets will be arranged on a scale from 1 to 5. 1 represents a low CPU usage rate while 5 represents a high CPU usage rate.

FAVORITES (FAV)	Allows 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.

4.4 Keyboard View

The Keyboard view of Analog Factory 2.5 (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 sounds of the presets. We will take a moment now to look at these controls.

4.4.1 Virtual keyboard

The LEVEL knob controls the general volume of Analog Factory 2.5. 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 2.5 without the need for an external master MIDI keyboard. With the aid of the TRANSPOSE function found on the left of the virtual keyboard, above the pitch and modulation wheels, the user may scroll up or down the keyboard for notes in higher or lower ranges than is visually presented.

Virtual Keyboard

4.4.2 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").

Wheels

PITCH WHEEL	Wheel controlling the pitch of the sound. 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 controlling modulation (MIDI controller #1)

⚠ *The modulation wheel is not necessarily connected on every preset! It will depend on the preset being used.*

4.4.3 Filter

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)

4.4.4 LFO

The LFO, Low Frequency Oscillator, is used as a modulation source for Analog Factory 2.5'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:

LFO

RATE	Sets the LFO rate/speed
AMOUNT	Sets the amount of LFO modulation

4.4.5 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)*.

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, one can simply point the mouse over a Key Parameter knob and an information block will appear specifying the parameter name.

4.4.6 FX MIX (Effects Mix)

Analog Factory 2.5 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 in spite of this 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).

FX MIX

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 can simply adjust the Delay MIX knob to control the quantity of the effect.

4.4.7 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 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) one can very simply edit the amplitude curve envelope of each sound within Analog Factory. If, for example, one finds a sound pleasant but the attack is too long, he can use the A fader to reduce it.

ADSR envelope

As will be described in the following paragraphs, the diverse parameters of Analog Factory 2.5 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 2.5 with an external MIDI keyboard.

4.4.8 SNAPSHOTS buttons

Snapshots buttons

The Snapshots 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 it, for easy access. These 8 snapshots are automatically saved when Analog Factory 2.5 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 of his favorite presets along with any modifications previously made, and have everything they

need 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.

To take a snapshot:

- Simply [Shift]+click (⌘+click on Mac) on one of the 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 (⌘+click on Mac) operation is done on the same button, then the current Snapshot will be replaced without prompting the user.

4.4.9 MIDI control

Most of the knobs, sliders, and switches on the Analog Factory 2.5 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 2.5 application is correctly configured to receive MIDI events coming from the device.

Every instance of the Analog Factory 2.5 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 2.5 application. On the reception channel, the Analog Factory 2.5 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.

Assigning an external MIDI controller

5 MODES OF OPERATION

5.1 Standalone and MIDI configuration

The stand-alone application allows the use of Analog Factory 2.5 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.

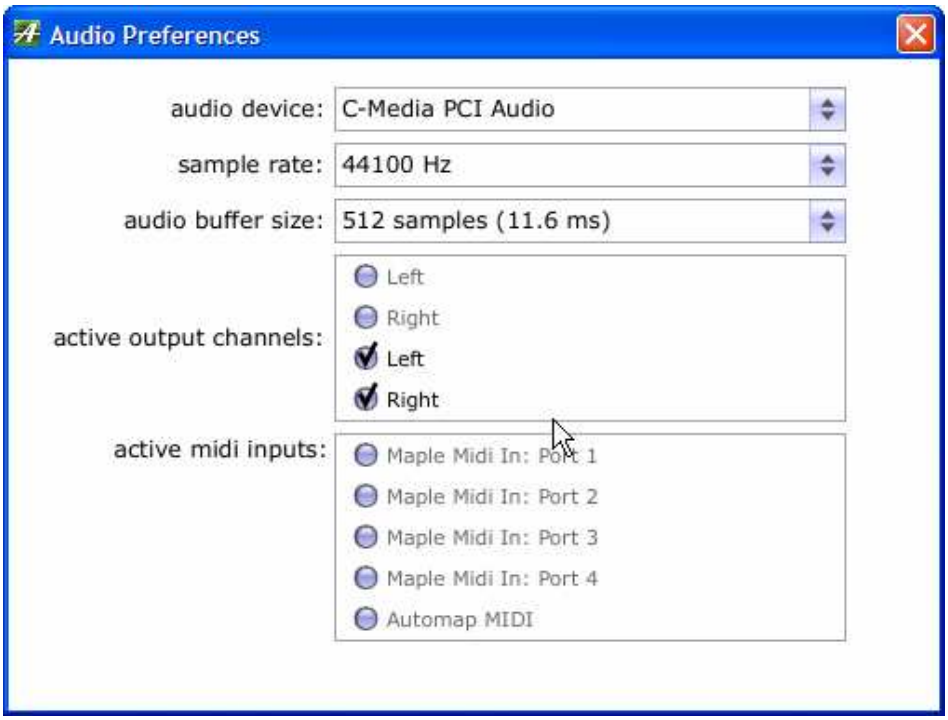
5.1.1 Launching the standalone application

To launch the Stand-alone application on your PC, go into the Start menu > Programs > Arturia > Analog Factory 2.5, and choose Analog Factory 2.5.

On a Macintosh, open the folder /Applications/ Arturia Analog Factory 2.5 / and double click on the application icon called Analog Factory 2.5.

5.1.2 Preferences configuration

In order to access the preferences window, click on the menu File > Audio & MIDI Preferences. This window allows you to configure the global preferences of the Analog Factory 2.5 application. These are saved automatically.



The preferences window

audio device Select the driver corresponding to the sound menu that you wish to use.

sample rate Choose the sampling frequency among those proposed by your sound menu. Note that higher sampling frequency rate settings will demand increased processor performance from your computer.

audio buffer size 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.

5.2 VST

5.2.1 Installation

5.2.1.1 Under Windows

During installation, select the box "VST" among the proposed format choices of plug-ins. The installer will automatically detect the VST folder of the instruments used by Cubase or Nuendo. In the case of another compatible VST sequencer, such as Logic Audio, you will have to manually copy the plug-in file in the appropriate folder. You will be able to find this file after the installation in:

C:\Program\Files\Arturia\Analog Factory 2.5\Analog Factory.dll

5.2.1.2 Under 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.

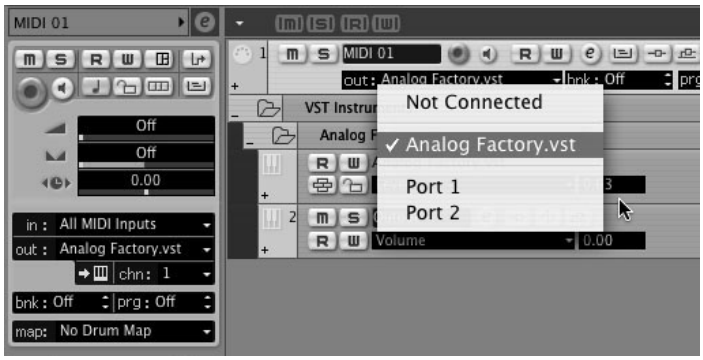
5.2.2 Instrument use in the VST mode

The opening of VST Analog Factory plug-ins is the same as opening all other VST plug-ins. Please consult the instruction manual of your host sequencer for more specific information. Under Cubase SX, open the menu "VST Instruments", and choose Analog Factory in the rack.

Using Analog Factory in Cubase SX3

5.2.2.1 Connection to a MIDI track

In order for Analog Factory 2.5 to play information coming from a MIDI track, you have to choose a MIDI track and select Analog Factory as MIDI output of this track. See the picture below for more detail on how this is accomplished.



Connection of a MIDI track to Analog Factory

The events played on a MIDI keyboard are recorded by your host sequencer, and now you can use the MIDI editing possibilities of the sequencer to control any parameter in Analog Factory 2.5.

5.2.2.2 Saving presets

When the session/project is saved, Analog Factory is saved in its last mode of operation, with all modifications intact. For instance, if you are working on a "P1" preset in which you have modified parameters (without saving this as a separate preset in the plug-in itself), at the next opening of the piece, Analog Factory will load the "P1" preset and the modifications as well.

The drop-down menu with the VST sequencer allowing you to save a new preset is of course usable with Analog Factory 2.5. However, it is highly advised to use the Analog Factory internal menu: the presets saved in this way are usable in any other mode (standalone or with another sequencer), they can be exported and exchanged more easily, and they will remain compatible with the future Analog Factory versions.

5.2.2.3 Automation

The automation works the same with Analog Factory as with any VST plug-in (for more detail about automation, refer to the VST sequencer documentation).

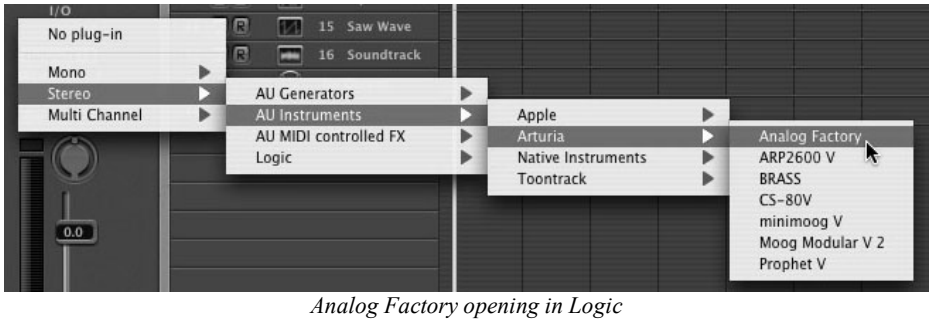
5.3 Audio Unit (Mac OS X only)

5.3.1 Installation

The Audio Unit plug-in is automatically installed in the folder reserved for this purpose, in **`/Library/Audio/Plug-Ins/Components/`**.

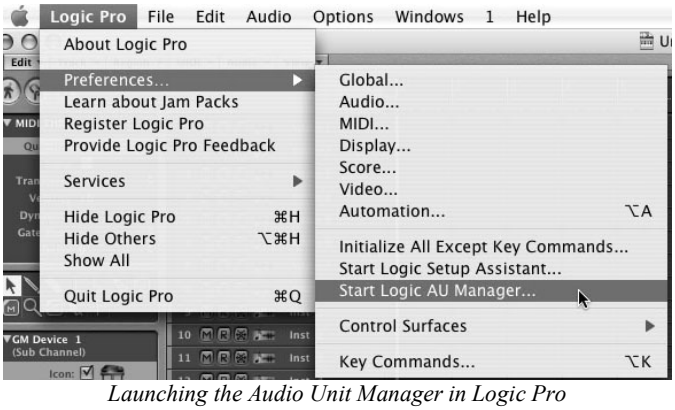
5.3.2 Use in Logic Pro

Select an instrument track. On the slice of the mixer corresponding to the selected track, click on the button "I/O" to obtain the list of plug-ins, then select Stereo > AU Instruments > Arturia Analog Factory.



Analog Factory opening in Logic

Since version 7, there has been an Audio Unit plug-in manager in Logic. To launch it, click on the menu Preferences > Start Logic AU Manager.



Launching the Audio Unit Manager in Logic Pro

This Manager allows us to see the list of the available plug-ins, to test their compatibility with Logic, and to activate or de-activate them.

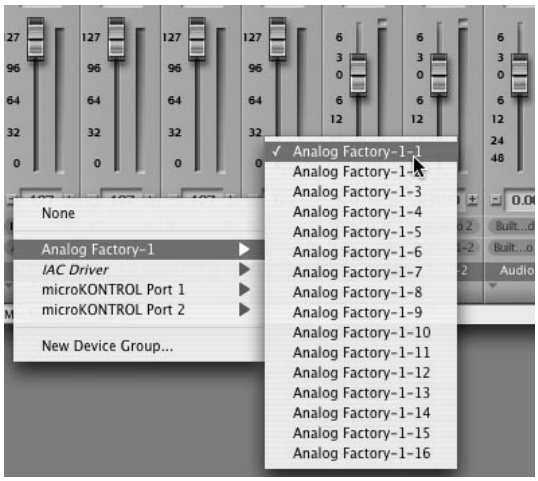
If it happens that one of the Arturia plug-ins poses a problem in Logic, start by checking that this plug-in has passed the compatibility test, and that it is actually selected for use.

5.3.3 Use in Digital Performer

To add an instrument, choose the menu Project > Add Track > Instrument Track > Analog Factory.

Opening of Analog Factory in the Digital Performer

Once you have added this instrument, it's possible to assign a MIDI track to it. In the connection menu of the MIDI track, select the instrument and the MIDI channel that you want to use.



Connection from a MIDI track to Analog Factory

5.4 Pro Tools

5.4.1 Installation

On Mac OSX, the plug-in is directly installed in the folder reserved for the Pro Tools plug-ins, in **`/Library/Application Support/Digidesign/Plug-Ins/`**.

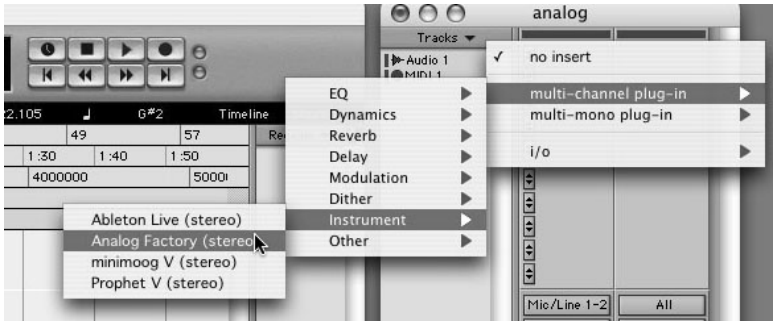
On Windows, at the time of the installation procedure, select the RTAS plug-in among the proposed choices of plug-ins. Then, when the system asks, indicate the folder in which the other RTAS plug-ins are located.

Usually, its access path is: **`C:\Program Files\Common Files\Digidesign\DAE\Plug-Ins\`**

5.4.2 Utilization of the plug-in

5.4.2.1 Opening the plug-in

Access to the Analog Factory plug-in is like all other plug-ins, via an audio track insert:

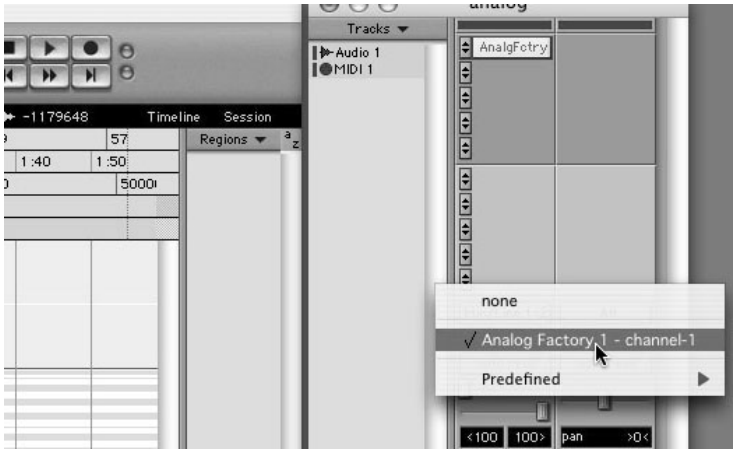


Opening Analog Factory 2.5 in Pro Tools

Analog Factory must be loaded on an audio stereo track. We can now make Analog Factory 2.5 sounds by playing with the mouse on the virtual keyboard.

5.4.2.2 Connection to a MIDI channel

So that Analog Factory 2.5 can play the information coming from a MIDI track, you have to associate it to a MIDI channel via the appropriate menu. (See the Pro Tools menu for more information on plug-in connection).



Connecting a MIDI track to Analog Factory

5.4.2.3 Saving the presets

When the session is saved, the status of Analog Factory 2.5 is saved as it is, even if its programming does not correspond to the preset. For example, if you are working on a preset P1 in which you have modified the parameters (without saving them in the plug-in itself), the next time you open the session, Analog Factory 2.5 will charge the P1 preset plus the modifications.

The Librarian Menu of Pro Tools can be used with Analog Factory 2.5 like with all other plug-ins. Nevertheless, it is highly recommended to use the internal Analog Factory 2.5 menu: with the presets saved like this, they are usable no matter which mode (standalone or other sequencer), and they can be exported, exchanged more easily, and will stay compatible with the future versions of Analog Factory 2.5.

5.4.2.4 Automation under Pro Tools

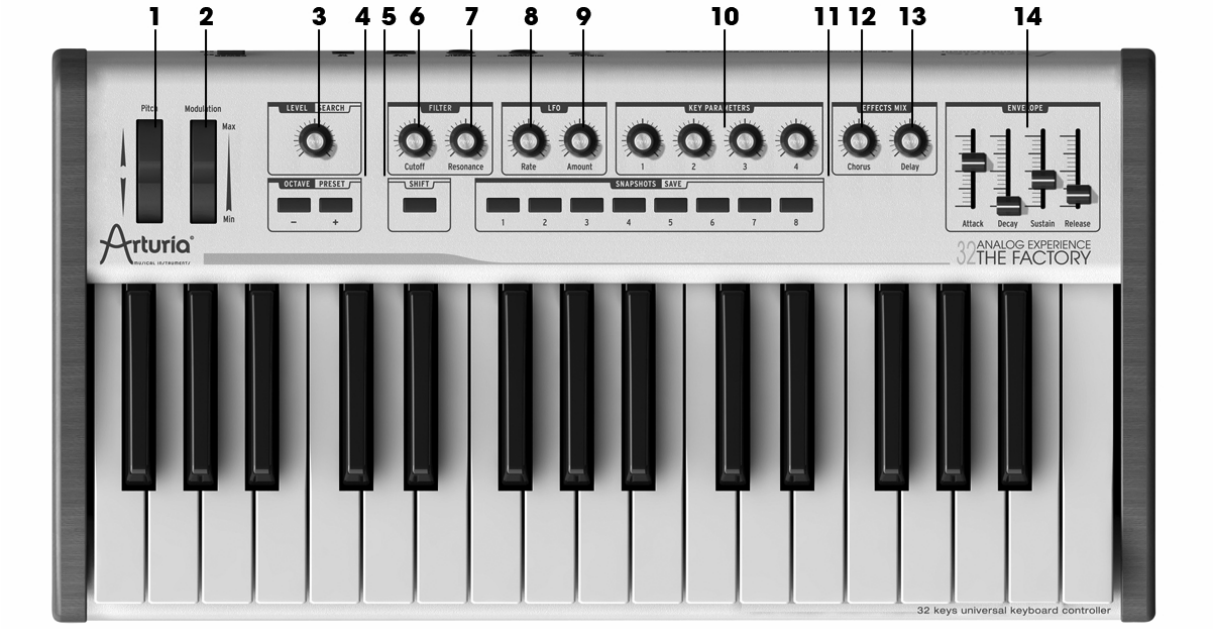
The automation functions with Analog Factory like with all RTAS/HTDM plug-ins (make reference to the Pro Tools documentation for more details on the plug-in automations).

6 ANALOG FACTORY KEYBOARD (ANALOG EXPERIENCE "THE FACTORY" ONLY)

6.1 Front panel overview

The Analog Factory Keyboard is a 32 key velocity sensitive keyboard including a control surface that is identical to the Analog Factory 2.5 software interface.

Front panel interface of the Analog Factory Keyboard overview from left to right:



1) Pitch bend wheel
2) Modulation wheel
3) Level knob or navigation knob (pushable rotary encoder)
4) Octave +/- or Preset up/down buttons
5) Shift button
6) Cutoff knob
7) Resonance knob
8) LFO rate knob
9) LFO amount knob
10) 4 key parameter knobs
11) 8 snapshot buttons
12) Chorus mix knob
13) Delay mix knob
14) 4 ADSR envelope sliders

6.1.1 The keyboard

The Analog Factory Keyboard is a 32-key velocity sensitive keyboard controller, with channel aftertouch.

6.1.2 Shift button

The Shift button can set the Analog Factory Keyboard in 'Shift' mode. When the button is pushed it will call a secondary function you can't get in the initial mode. This button lights up when the 'Shift' mode is activated.

It will operate on the features:

- Preset/Octave
- Snapshot/save buttons
- Level/search rotary encoder

See the following chapters for more details about their features.

6.1.3 Level/search rotary encoder

The "Level/Search" rotary encoder works either to set the volume of Analog Factory 2.5 or to select synth types or characteristic criteria of the presets. It works in combination with the Shift button.

When the 'Shift' mode is disabled, the "Level/Search" rotary encoder will set the volume of the synth.

When the 'Shift' mode is enabled, the "Level/Search" rotary encoder will select synth types or characteristics.

When you push on the encoder, it validates the search criteria for preset browsing using the convenient preset managing system of Analog Factory 2.5.

It is important to realize that this encoder is different from the others as it offers a switch option. Clicking on the encoder when in "Search" Mode allows selecting or unselecting search criteria.

6.1.4 Preset/octave buttons

These buttons have two functions (in combination with the shift button): the octave transpose and the preset selection.

When the 'Shift' mode is disabled, the Preset/Octave buttons "+/-"will work as **"Octave up/down"** buttons. You can increase (or decrease) by up to three octaves.

Pushing the minus or plus button makes the software transpose up to three octaves up or down to set the preferred octave section.

Seven states of leds will help you to visually locate the current octave setting:

- Octave -3 : led- blinks at speed 3, led+ does not blink
- Octave -2 : led- blinks at speed 2, led+ does not blink
- Octave -1 : led- blinks at speed 1, led+ does not blink
- Octave 0 : led– and led+ don't blink

- Octave +1 : led+ blinks at speed 1, led- does not blink
- Octave +2 : led+ blinks at speed 2, led- does not blink
- Octave +3 : led+ blinks at speed 3, led- does not blink

When the 'Shift' mode is enabled, these two buttons function as "Preset up/down" buttons for convenient browsing through the huge library of presets Analog Factory has to offer.

6.1.5 Snapshot/save buttons

The snapshot/save button enables one to recall or save a snapshot. It works in combination with the Shift button.

When the 'Shift' mode is disabled, the "Snapshot/Save" buttons will **recall** a snapshot.

When the 'Shift' mode is enabled, the "Snapshot/Save" buttons will **save** a snapshot. All editable functions of Analog Factory 2.5 are saved within the snapshot.

6.2 Wheels

These two controllers are used for real time pitch shift and modulation amount settings.

6.2.1 Pitch wheel

Moving the Pitch Wheel up or down alters the pitch of the played sound. The octave range of the pitch wheel depends on which preset is selected.

6.2.2 Modulation wheel

Moving the Modulation Wheel up or down alters the modulation amount of the played sound. The level of modulation introduced by moving the modulation wheel depends on which preset is selected.

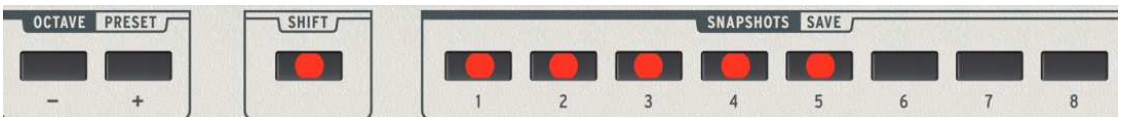
⚠ *The modulation wheel is not necessarily connected on every preset! It will depend on the preset being used.*

6.3 Aftertouch

This keyboard can transmit channel aftertouch (that is a pressure value common to all pressed keys).

Aftertouch (AT) can be calibrated to your liking this way:

1. Turn power off, press both "Shift" button and the push button on the left most knob, then turn power on
2. The keyboard enters the after touch calibration mode. LEDs will light up, showing the current configuration. The 11 leds from all buttons are used in this mode. The leftmost LED ("Octave 1") shows the first block of AT values, while the rightmost one ("Snap #8") shows the highest AT values. The actual range used for aftertouch will be highlighted (one LED represents about 12 aftertouch steps so the range shown below is about "24..96") :



3. Press a key using a force that will not generate any aftertouch effect (aftertouch 0). The LEDs will show its approximate position. Pressure lower than that is used for normal playing.
   Please note that the highest aftertouch value issued between note on and note off will be taken into account. In other words, if you are going too far, you have to release the note and try again by pressing another note.
4. Press the push button on the left most encoder to confirm.
5. Press a key using a force that will generate the maximum aftertouch effect (aftertouch 127). The LEDs will show its approximate position.
   Please note that the pressure must be higher than the one used at step #3.
6. Press both Shift button and the push button on the leftmost knob to confirm your settings and exit.
7. Your setting will be saved in non-volatile memory.
   This setting will however revert to its default value if the keyboard is re-initialized.

6.4 Synthesis section

This part presents all the synthesis parameters for Analog Factory 2.5.

6.4.1 Filter setting rotary encoders

There are two rotary encoders available to alter the filter settings of the selected preset. These two encoders are 'Cutoff' and "Resonance".

6.4.2 LFO setting rotary encoders

There are two rotary encoders available to alter the LFO settings of the selected preset. These two encoders are "Rate" and "Amount".

6.4.3 Key Parameter rotary encoders

There are four 'Key Parameter' rotary encoders available on the Analog Factory keyboard. Tweaking these parameters can alter the sound of the preset in various ways. Which parameters are affected depends on the selected preset.

6.4.4 FX Mix rotary encoders

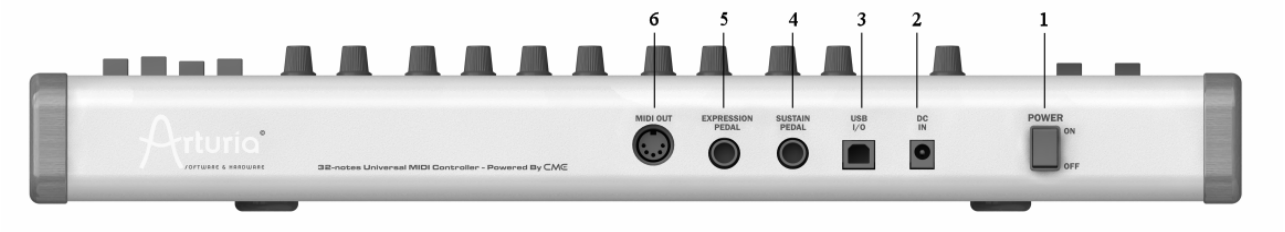
There are two 'FX Mix' rotary encoders available on the Analog Factory keyboard. These two encoders are for 'Chorus' and 'Delay'. Both encoders set the Dry/wet level of the effect.

6.4.5 Envelope Sliders

The four sliders that can be found on the top right part of the controller's interface affect the envelope generator of Analog Experience "The Factory" VCA. The four sliders marked A, D, S, R, correspond to the Attack, Decay, Sustain and Release of the VCA envelope.

6.5 Rear panel overview

Back panel interface of the Analog Factory Keyboard overview from right to left:



1) Power on/off switch
2) DC in connection. (DC power adaptor requirement: 12V 500mA ⊖◉⊕)
3) USB connection
4) Sustain pedal connection
5) Expression pedal connection
6) MIDI out connection

Setting up the Analog Factory Keyboard is fast and simple. First Install the Analog Factory program on your computer. After unpacking the keyboard it is time to connect it to the computer. As the Analog Factory Keyboard is bus powered by USB, connecting it by only one simple USB cable to your computer is all you have to do. If you wish to use an adapter instead of the bus power, connect a 12V DC 500mA adapter to the back of the Analog Experience "The Factory" Keyboard.

⚠ *The DC adapter is not included on the Analog Experience pack. Before connecting an external DC adapter, make sure you are connecting a compatible adapter. See the technical specifications for compatibility details!*

It is not necessary to install the driver for the Analog Factory Keyboard in order to get it to function with your computer. Analog Experience "The Factory" is "plug and play" compatible. The driver is automatically installed when you install Analog Experience "The Factory".

6.5.1 MIDI connections

The Analog Factory Keyboard sends and receives MIDI via USB. Furthermore the Analog Factory Keyboard can function as a MIDI interface. A 'MIDI out' connector is located on the back of the keyboard. This connector lets you send MIDI data to anything that has a MIDI in connector. This could be a sound module, synthesizer, sequencer or drum computer for instance.

6.5.2 Power supply

Although the Analog Factory Keyboard is USB bus powered, it is also possible to use a DC adapter when this is required. If you wish to use an adapter instead of the bus power, it is possible to connect an optional 12V DC 500mA ⊖—◉—⊕ adapter to the back of the Analog Experience "The Factory" Keyboard.

6.6 Basic MIDI control

Every parameter of Analog Factory 2.5 is controllable by the included keyboard controller. Once the software is started and the keyboard controller is connected, the software can be totally controlled without the use of mouse or a computer keyboard.

7 MIDI IMPLEMENTATION (ANALOG EXPERIENCE "THE FACTORY" ONLY)

7.1 Using the keyboard

Your Analog Factory Keyboard can be used independently of Analog Factory 2.5. It can be used as a standard MIDI controller.

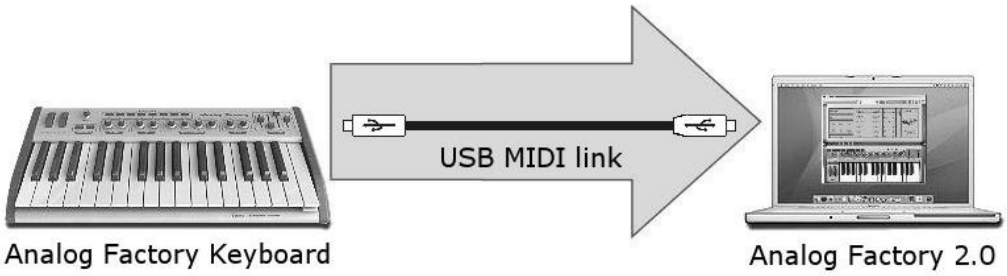
The following information allows you to benefit from your MIDI keyboard, and to help you use it with other software or instruments.

7.2 What is MIDI?

MIDI (for Musical Instrument Digital Interface) is a universal standard that allows electronic musical instruments and computers to exchange performance data.

MIDI makes it possible to convey to another musical instrument, an ongoing description of exactly what's happening during performance. For example, a C key played on your Analog Factory MIDI keyboard has been pressed using a certain amount of velocity, the instrument (Analog Factory 2.5 launched on your computer, itself provided with a MIDI interface) will exactly answer to these MIDI messages.

In other words, MIDI is a language that musical instruments can use to communicate with each other.



The MIDI standard includes 127 MIDI parameters that are pre-assigned to synthesis or sound parameters used by all the MIDI sound modules or software.

Some MIDI specific messages – SysEx, or System Exclusive messages – can also be used by the MIDI-based sound modules or music software to control some specific parameters.

7.3 MIDI implementation chart

Arturia Analog Experience "The Factory" USB MIDI Master Keyboard.

Model : **AFE32**

Version : **1.1**

Function		Transmitted	Recognized
Basic Channel	Default	1	1~16
	Changed	1~16	1~16
Mode	Default		
	Messages		
	Altered		
Note Number		0~127	X
	True Voice	*******	
Velocity	Note On	O v=0~127	X
	Note Off	O	X
After Touch	Key's	X	X
	Channel	O	X
Pitch Bend		O	X
Control Change		O v=0~127	X
Program Change		X	X
System Exclusive		O	O
System common	Song position	X	X
	Song select	X	X
	Tune request	X	X
System Real time	Clock	X	X
	Commands	X	X
Aux Messages	Local on/off	X	X
	All notes off	X	X
	Active sensing	X	X
	System reset	X	X

7.4 MIDI controllers list

Item id	Description	CC number	Value
0x01	Filter Cutoff	74	0..127
0x02	Filter Reso	71	0..127
0x03	LFO Rate	76	0..127
0x04	LFO Amount	77	0..127
0x05	Key param 1	18	0..127
0x06	Key param 2	19	0..127
0x07	Key param 3	16	0..127
0x08	Key param 4	17	0..127
0x09	Fx Chorus	93	0..127
0x0A	Fx Delay	91	0..127
0x0B	Envelope Attack	73	0..127
0x0C	Envelope Decay	75	0..127
0x0D	Envelope Sustain	79	0..127
0x0E	Envelope Release	72	0..127
0x10	Preset down	20	0 or 127
0x11	Preset Up	21	0 or 127
0x12	Recall snap 1	22	0 or 127
0x13	Recall snap 2	23	0 or 127
0x14	Recall snap 3	24	0 or 127
0x15	Recall snap 4	25	0 or 127
0x16	Recall snap 5	26	0 or 127
0x17	Recall snap6	27	0 or 127
0x18	Recall snap 7	28	0 or 127
0x19	Recall snap 8	29	0 or 127
0x22	Save snap 1	104	0 or 127
0x23	Save snap 2	105	0 or 127
0x24	Save snap 3	106	0 or 127
0x25	Save snap 4	107	0 or 127
0x26	Save snap 5	108	0 or 127
0x27	Save snap 6	109	0 or 127
0x28	Save snap 7	110	0 or 127
0x29	Save snap 8	111	0 or 127
0x30	Volume	7	0..127
0x31	Search	112	+/- 1
0x32	Select	113	0 or 127
0x40	Modulation wheel	1	0..127
0x50	Sustain pedal	64	0 or 127
0x51	Exp pedal	11	0..127

7.5 System Exclusive messages detail

SysEx	Description		T	R
F000206B02 0101 nn F7	Item config request	nn:item		O
F000206B02 0102 nn cc F7	Item config response	cc:cc number	O	
F000206B02 0103 nn cc F7	Item config Set			O
F000206B02 0201 nn F7	Item value request	nn:item(0x01 to 0x0A)		O
F000206B02 0202 nn vv F7	Item value response	vv: value	O	
F000206B02 0203 nn vv F7	Item value set			O
F000206B02 0301 F7	MIDI channel request			O
F000206B02 0302 0c F7	MIDI channel response	c: MIDI channel(0 to F)	O	
F000206B02 0303 0c F7	MIDI channel set			O
F000206B02 0401 F7	Octave shift request			O
F000206B02 0402 ss F7	Octave shift reponse	ss: octave shift (-3 to 3)	O	
F000206B02 0402 ss F7	Octave shift set			O
F000206B02 0501 F7	velo curve request			O
F000206B02 0502 nn F7	velo curve response	nn: curve index	O	
F000206B02 0503 nn F7	velo curve set			O
F000206B02 0601 F7	aft-touch curve request			O
F000206B02 0602 nn F7	aft-touch curve response	nn: curve index	O	
F000206B02 0603 nn F7	aft-touche curve set			O
F000206B02 0701 F7	acc mode request			O
F000206B02 0702 nn F7	acc mode response	nn: mode index	O	
F000206B02 0703 nn F7	acc mode set			O
F000206B02 0801 nn F7	led state request	nn:item 0x63 to 0x6A		O
F000206B02 0802 nn 0v F7	led state response	vv: value (0 or 1)	O	
F000206B02 0803 nn 0v F7	led state set			O
F000206B02 0901 nn F7	global param. request	nn:parameter **(*)**		O
F000206B02 0902 nn 0v F7	global param. response	vv: value (0 or 1)	O	
F000206B02 0903 nn 0v F7	global param. set			O

(*) Global parameter:

nn = 2 Relative mode: 1 = absolute, 127 = relative

Values that could be negative are coded this way: absolute value is coded on the 6 less significant bits; the sign is coded on the 7th bit.

8 MIDI CONTROL CENTER (ANALOG EXPERIENCE "THE FACTORY" ONLY)

The MIDI Control Center is a separate utility that can be used to configure the MIDI settings of your Analog Experience keyboard.

This utility can be found in the same folder as Analog Experience 2.5.

8.1 Launching the MIDI Control Center

Before launching the MIDI Control Center, ensure that your Arturia Analog Experience keyboard is connected to your computer.

The MIDI Control Center utility will automatically attempt to detect the keyboard and load its current configuration.

⚠ *The MIDI Control Center is specifically designed to drive the Analog Experience keyboard; trying to use it with another MIDI device will inevitably fail.*

The top sections enable you to edit your keyboard settings.

The bottom section represents the actual elements of your Analog Experience keyboard and is used to select which control will be set up.

8.2 Changing MIDI settings

8.2.1 Global settings

The settings that can be set globally (i.e. for the entire keyboard) are:

MIDI CHANNEL	MIDI channel that the keyboard will use to send all MIDI events.
KNOB MODE	**Absolute**: default mode for Analog Factory. Knobs send absolute values. **Relative**: knobs send 63 and below for negative values, 65 and above for positive values. ⚠ ***The relative mode is not compatible with Analog Factory**, this setting is only available for an increased compatibility with other MIDI devices or softwares.*
DEFAULT VALUES	Pressing this button will reload **all** factory default settings for the keyboard.

8.2.2 Individual control settings

To configure the MIDI CC used for a specific control on your keyboard:

- Click on the control you wish to select. The selected control will be highlighted in Red. Its settings will be automatically displayed in the "Selected Control" section.

- Change the CC number assigned to this control by selecting the appropriate line in the drop-down list:

8.2.3 Saving settings to the keyboard

Changes done in the utility are not saved to the keyboard until you press the "Send to Keyboard" button.

When you are ready to save the entire configuration, press "Send to Keyboard".

9 ARTURIA ANALOG FACTORY 2.5 – LEGAL INFORMATION

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9.2 FCC INFORMATION (USA)

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IMPORTANT: When connecting this product to accessories and/or another product, use only high quality shielded cables. Cable (s) supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FFC authorization to use this product in the USA.

NOTE: This product has been tested and found to comply with the limit for a Class B Digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide a reasonable protection against harmful interference in a residential environment. This equipment generate, use and radiate radio frequency energy and, if not installed and used according to the instructions found in the users manual, may cause interferences harmful to the operation to other electronic devices. Compliance with FCC regulations does not guarantee that interferences will not occur in all the installations. If this product is found to be the source of interferences, witch can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

- Relocate either this product or the device that is affected by the interference.
- Use power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter(s).
- In the case of radio or TV interferences, relocate/ reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial cable.
- If these corrective measures do not bring any satisfied results, please the local retailer authorized to distribute this type of product. If you cannot locate the appropriate retailer, please contact Arturia.

The above statements apply ONLY to those products distributed in the USA.

9.3 CANADA

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AVIS: Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

9.4 EUROPE

CE This product complies with the requirements of European Directive 89/336/EEC