Elixir

FLUX:: Immersive

2/6/23

Table of contents

1 Elixir - Real Multichannel True Peak Limiter

Product Page | Shop Page

Thank you for using Elixir. We hope that you will get good use of the information found in this manual.

2 Introduction

Elixir is the improved and revamp version of the legacy Elixir. Such as it, Elixir is a novel kind of program limiter carefully designed to accomplish a truly natural sounding result without changing the nature of the audio material and its timbre, presenting none, or effectively reduced, conventional limiting "pumping" effects even during heavy processing. Now supporting up to 32 channels, 64bits float audio processing and conforming with the ITU-R and EBU loudness norms, Elixir Essential is an indispensable tool for immersive audio productions.

It's a REAL True Peak Limiter, providing a guaranteed True Peak output level according to the ITU-R-BS 1770 or the ITU-R-BS 1770-3, and EBU R128 norms. The algorithm is using an oversampled representation of the audio sample as a reference when it defines the gain envelope; still, the processing is only applied to the original none oversampled data in order to reduce artifacts (like aliasing), and to achieve the most excellent sounding result.

Working on 64bits audio processing when the Digital Audio Workstation supports it, Elixir is incredibly easy to achieve great results with: set the input level, adjust 'Threshold' according to the amount of limiting you want, and finally enable 'Make Up' to compensate the gain and to add loudness - That's it! There is no need to care about release time or any other conventional limiter settings!

There's an additional feature provided to increase the processing quality in Elixir called 'Stages'. Stages present the option to set the algorithm to perform the limiting processing in multi-stages, for a limitation more natural and more respectful of the sound material.

3 Elixir Session, Elixir Essential

Elixir comes with two different licensing options: - Elixir *Session* supports up to 2 channels and a sample rate up to 96kHz. - Elixir *Essential* supports up to 32 channels and a sample rate up to 384kHz

The build is the same for both Session and Essential versions, the licensing allowing to use the plug-in as Elixir Session or Essential.

4 About True Peak

All digital audio wave signal is ultimately converted back to analog at some point, and while it is often desirable to maximize the overall volume of a signal or a complete mix, care must be taken in order not to go above the digital scale zero decibel ceiling, or nasty distortion and clipping will occur. This common and widely used rule is however not entirely sufficient, as the digital and analog processing involved in a D/A converter does not guarantee that a 0dBfs peak signal will exactly translate to a 0dB peak in the analog domain.

Without getting into too much detail, this phenomenon can be attributed to the over-sampling and reconstruction filters present in D/A converters, whose role are to rebuild a continuous time signal from a set of discrete digital values sampled at regularly spaced time intervals. This interpolation process can therefore generate values, which lie above 0dB, and is known as overshoot.

Relying solely on the peak value of samples can lead to the following problems:

- Inconsistent readings between successive playbacks of the same material.
- Unexpected overloads of the D/A output converter.
- Under-readings and beating of pure tones.

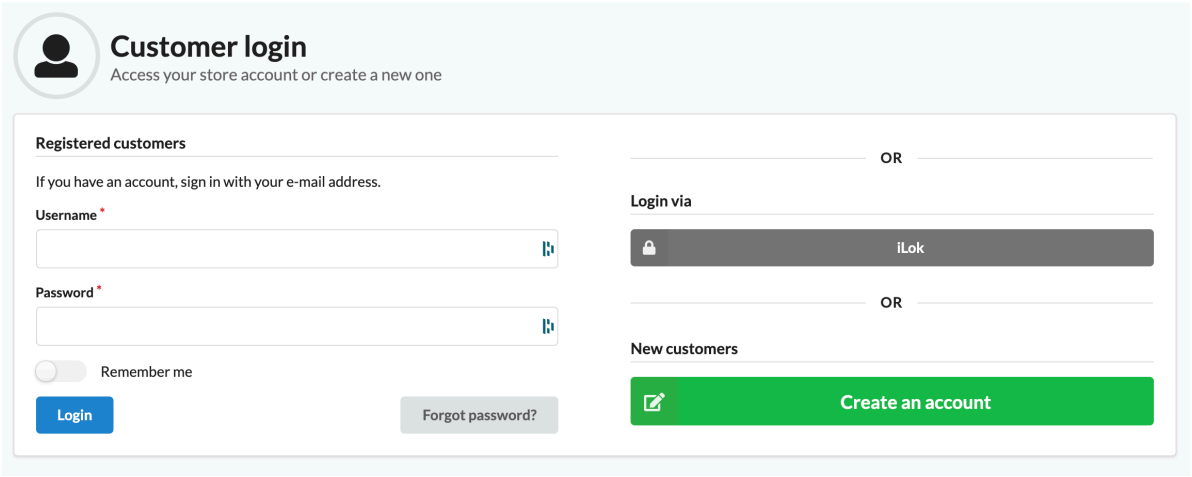
Using True Peak value aims to overcome these limitations by mimicking parts of the D/A conversion process, effectively up-sampling the measured signal, in order to use the true value of peaks that occur in the analog domain.

5 Installation

If you are new to the FLUX:: Immersive ecosystem, the first installation of FLUX:: software is a four steps process :

1. Create an account at flux.audio
2. License code redeem
3. Software license activation
4. Download and installation

5.1 Create and account

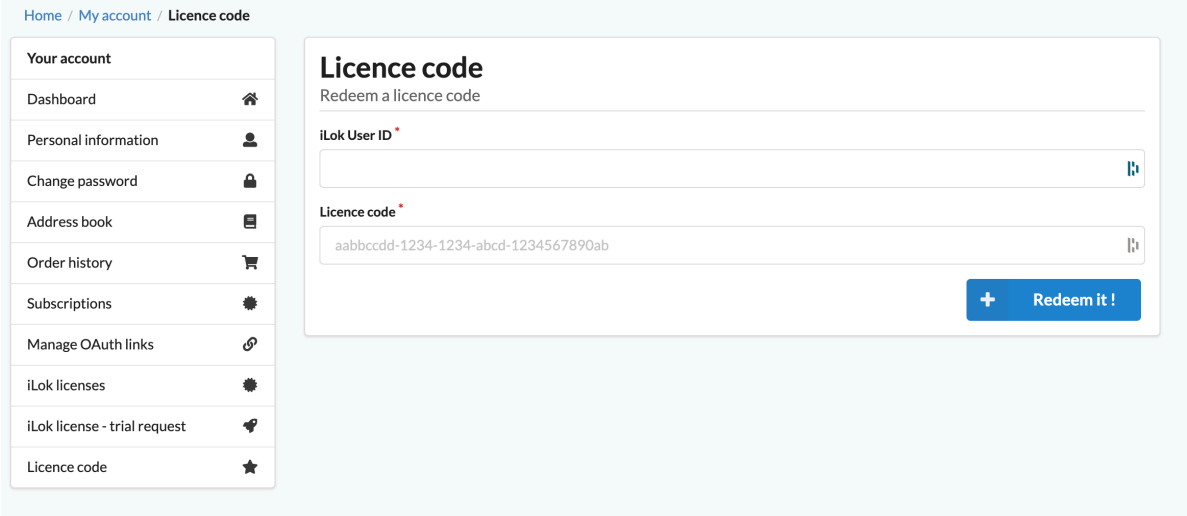


Create an account

5.2 Redeem a License Code from activation code

Unless you purchased your license in the flux.audio online store, you will need to redeem your license.

FLUX:: uses the iLok license management system to deliver software licenses to users. If you have received an activation code (such as from a dealer purchase),you can use the Redeem License Code window to activate your license.



Visit our License Code Activation page.

> Two different licenses are available for this product: Elixir Session and Elixir Essential. Check the technical details page for more informations.

5.3 iLok User Account

To activate licenses:

iLok License Manager

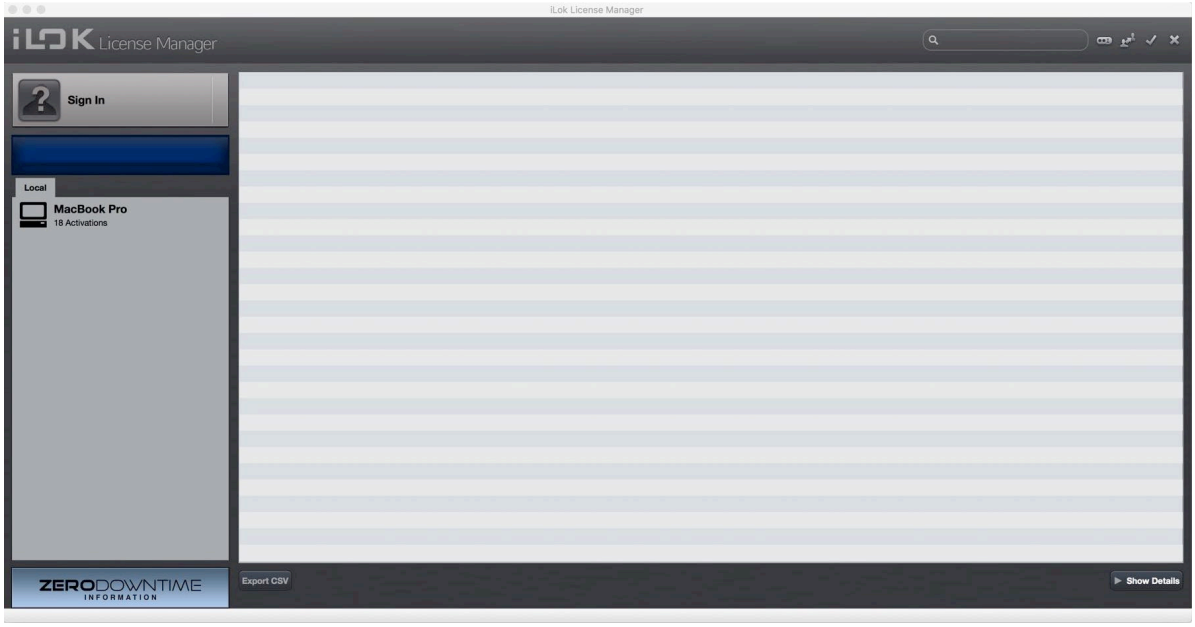
- An iLok user account is required.
- An iLok USB key is optional.

FLUX:: uses the iLok license management system to deliver software licenses to users. If you don't have an iLok account yet, please create a free iLok account at http://www.ilok.com and download the iLok license manager. All FLUX:: plug-ins come with two activations. Having two activations gives you the possibility of a fixed license on one particular machine and a portable license on an iLok USB key if you own one.

> Cloud license currently not supported

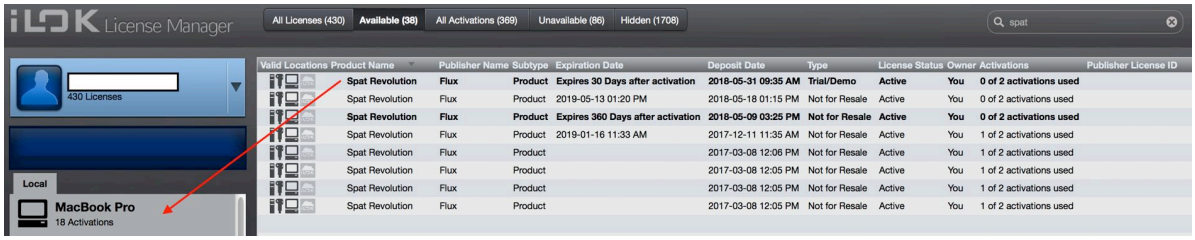
5.4 iLok License Manager

If you have redeemed your software license or completed your purchase process, your license will automatically be delivered into your iLok account



For new iLok users, the first step is to download and install the iLok license manager available on the home page of the iLok website. When your user account is successfully activated and the iLok license manager is correctly installed, you can start the license manager software and log in to your iLok user account.

5.5 Transferring license



Pressing on the sign in button will allow you to connect to your account. After Logging in, you are now ready to transfer any licenses to a computer or to any iLok USB key if you happen to have one. The process of transferring a license is as simple as dragging the license from the Available tab to your Local Computer *(or iLok key)* on the left side.

Simply drag your license to your Local Computer or on an iLok USB key. You are now set!

> If you require further information about iLok and managing licenses please refer to iLok.com website

5.6 FLUX:: Center

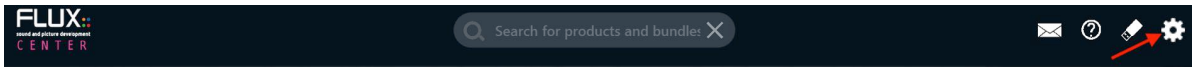
Next step is to get the installers for the FLUX:: products you are licensed for. All the software and plugins from FLUX:: are available via our FLUX:: Center software. This is a Mac or Windows application we have created to help keep your FLUX:: products up to date and to give you a clear overview of what you have installed. Firstly, please visit the download section of the FLUX:: Website to get the installer for the FLUX:: Center application.

On this page you will find a macOS, a Windows 64 bits, as well as legacy versions for older operating systems. After downloading and installing, you can open the FLUX:: Center applications to begin the process of installing the Elixir.

!> An authentification is required at the launch of FLUX:: Center. This is the login details of your FLUX shop account which allows you to see only your products licensed for (temporary or permanent)

> *To be noted:* The binary is the same for either Session and Essential version.

5.7 Center Preferences



When you open FLUX:: Center you will see a page that lists all FLUX:: products available for you to install. You will also find information about which version you have currently installed on your system and which new versions might be available for you to update to. You can select versions to install - or uninstall if necessary - using the pull down menus. If you would like to access more installer options such as your preferred plug-in format, please click on the gear icon to the top right of the header area.

5.8 Center Preferences and Options

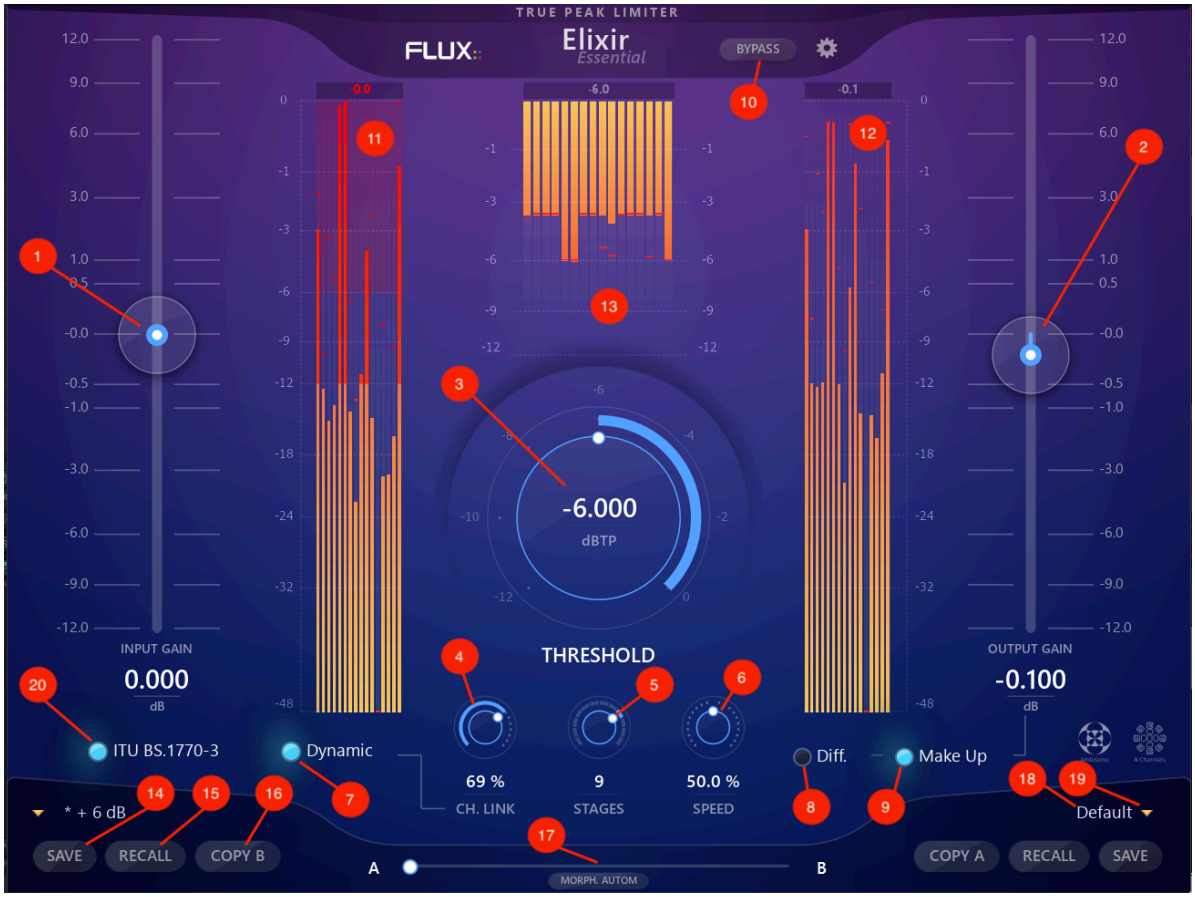
This preference page will allow you to choose various installation options such as preferred plug-in formats for your system. Choosing your format and returning to the main page by pressing the OK button will show all your install options for software and plugins based on the desired formats chosen.

If you would like to be closer to the most current development cycles of the software, you can enable the Beta Versions option. This will give you access to a special set of software installers from the pull down menus on the main FLUX:: Center page. Beta versions are the new builds that are still under development but may contain useful bug fixes and new features. If you find that a beta version is not stable enough for you, then you can always roll back to a stable release version at any time through the FLUX:: Center installers. Note that these versions starts with a "B" where official releases start with a "V"

6 User interface

As you may notice, the controls are not the usual suspects found on a dynamics processor (I/O Gain and Threshold excepted).

Instead, the controls provided typically affect more than one parameter in the underlying algorithms, with everything carefully tweaked allowing for creative processing still ensuring the finest sound achievable.



6.1 Commun parameters

6.1.1 Threshold dBTP (3)

Control the threshold (or ceiling) used for limiting.

Unit: Decibel (dB) Range: -12.000 to 0. Min. Steps: 0. Default Value: 0.

6.1.2 Input Gain (1)

Control the gain applied to the limiter input.

Unit: Decibel (dB) Range: -12.000 to +12. Min. Steps: 0. Default Value: 0.

6.1.3 Output Gain (2)

Control the gain at the output stage of the limiter.

Unit: Decibel (dB) Range: -12.000 to +12. Min. Steps: 0. Default Value: 0.

6.1.4 Diff. (8)

Allow to hear the difference only. Used to better understand the action and allow to easily tweak the parameters.

On/Off Default Value: Off

6.1.5 Make Up (9)

Apply Gain compensation. Add the invert of the threshold gain to the output gain.

On/Off
Default Value: Off

6.1.6 Bypass (10)

Bypass the plug-in processing by routing the input direct to the output. The actual processing is still performed in the background allowing for a true and smooth transition between the processed and the actual incoming signal.

6.1.7 ITU BS.1770-3 (20)

When activated, the algorithm used to limit the input signal follow the ITU BS.1770-3 recommandation.

6.2 Processing Section

6.2.1 Ch. Link (4)

% of channels linkage

Unit: Percent (%) Range: 0 to 100 Min. Steps: 1

Default Value: 0

6.2.2 Ch. Link Dynamic (7)

Make the channels' linkage dynamic according to the signal. It means: when activated, the Channel Link will automatically move from 0 when high dynamic (i.e. high transients) are detected and the desired value when no dynamic (i.e. low transients) are detected.

Unit: On/Off Default Value: Off

6.2.3 Stages (5)

Number of stages (passes or steps) used by the algorithm. Because the algorithm adapts itself to the audio material, doing multi stages allows for the processing to be even more precise and provides an even more natural sounding result. For e.g. if the threshold is set to -3 dB and Stages set to 3: first stage will limit at -1dB, second stage will limit at -2dB and third will limit at -3dB with analyzing done for each stage!

Range: 1 to 12 Min. Steps: 1 Default Value: 1

6.2.4 Speed (6)

Allow to change how the algorithm will react regarding the audio material. This will change how the gain envelop will be generated with more or less look-ahead, release and curve smoothing. Leave it at 50% by default which will be optimal for most case. Prefer increasing stages before trying to reduce it and remember that from 50% to 100 % it can generate more and more distortion…

Unit: Percent (%)
Range: 0.0 to 100. Min. Steps: 0. Default Value: 50.

6.3 Metering Section

6.3.1 Signal Input dBTP True Peak Meter (11)

6.3.2 Signal Output dBFS True Peak Meter (12)

6.3.3 Comp. dBFS Meter (13)

All information is displayed at a refresh rate of 60 fps (if possible) and displaying the maximum action during the processing period.

6.4 Preset management

Elixir, as well as all other FLUX:: plug-ins, provides two preset slots referred to as slot A and slot B, which means that you can have direct access to two sets of parameter settings simultaneously. In addition to just recall (33) the settings for each of the slots individually and alternate between their settings, a morphing slider (35) is provided offering the possibility to morph between the slots and their corresponding settings. When clicking on one of the preset slots (38), the built-in preset manager appears.

The preset manager contains three preset banks: - the *Factory bank* contains factory presets, this bank is not available for saving of presets but any of the presets can be loaded into a preset slot and then saved into, - the *User bank*, where all user presets are saved, - the *Global bank*, which is a bit special: here you can save a complete snapshot with all the settings from both preset slots, as well as the position of the morphing slider.

In the preset manager, any preset can be loaded into a preset slot by double-clicking on the name of the desired preset in the actual preset list, the preset will then be loaded into the preset slot corresponding to the position of the morphing slider.

6.5 Additional controls in the preset manager

- *Recall A* loads the selected preset into the corresponding slot.
- *Recall B* loads the selected preset into the corresponding slot.
- *Update* saves the current settings into the selected preset.
- *New* saves the current settings into a new preset.
- *Duplicate* creates a copy of the selected preset and saves it to the list.
- *Edit* allows for changes to the preset meta properties.
- *Delete* removes the selected preset.
- *Export* creates a file reflecting the content of the current preset bank.
- *Import* allows for import of a preset bank file by adding the imported banks content to the content in the current preset bank.

When saving or editing a preset, an option to protect the preset is presented. The preset protection, if engaged, only allows the original preset author to uncheck and edit the preset. This means that you can protect your presets in a multi-user configuration. Protected presets can only be modified using the session used for their creation. If used in another user session they can only be imported or deleted.

6.6 Elixir Preset Controls

6.6.1 Save (13)

To save a new preset using the built-in preset manager, simply click *Save* in the corresponding preset slot (A/B), and to save changes to your preset, simply click *Save* again.

If you want to resave your preset under a new name, open the preset manager by clicking the corresponding (A/B) preset slot (38), select *New*, enter a name for your preset, and press *Save*.

6.6.2 Recall (14)

Recalls the settings of the corresponding slot.

6.6.3 Copy A/B (15)

To copy all parameters between the preset slots (A to B or B to A), press the *Copy A* or *Copy B* button, and the parameters from the corresponding preset slot will be copied into the current preset slot. When copying parameters from one slot to another, the preset morph slider will automatically slide to the slot the parameters where copied to.

6.6.4 Morphing Slider (16)

The morphing slider provides mixing between the settings of slot A and B and allows for some very creative tweaking.

The result of the morphing can be saved as a global preset containing the actual settings of both preset slots as well as the morphing slider position.

To save a Global preset, open the preset manager by clicking the corresponding (A/B) preset slot (38), then click *Global*, select *New* and enter a name for your global preset, then press *Save*.

6.6.5 Automation (Morphing Slider) (17)

When enabling the Automation control button, the morphing slider will be exposed and available for both automation read and write.

Though with the button engaged, only the morphing slider value is applied when reading automation.

The Automation control button must be engaged if the morphing slider needs to be mapped on a control surface.

6.6.6 Preset Name (18)

Displays the name of the current preset.

6.6.7 Preset Slot (19)

By pressing the little arrows in the preset slot, the built-in preset manager appears.

7 Main Setup

These parameters are global for all Elixir instances. They are saved on the preferences document folder, and are commun for all the DAW.

7.1 Display Quality

Set the display refresh of the UI. Default: 30 fps.

7.2 Config

Allow to choose the input/output config of the plugin. The field is editable or not, according to the DAW.

7.3 UI size

Set the plugin size. > If you choose a too big size and cannot change it anymore, please close the UI of all Elixir instances, and delete “Preferences” on “/Documents/FLUX SE/Elixir”.

7.4 Report latency

Allow to report the latency to the DAW or not. Default: On

7.5 Process in multithread

Parameter set by default according to the DAW, defining if the automation is processed on the main thread or on another thread. Please tweak this parameter only on FLUX:: support request.

7.6 OSC

All plugins are controllable by OSC.

7.6.1 Enable

Enable OSC control, IN and OUT.

7.6.2 Input and Output port and IP address

Set it according to the destination port and IP number, and the network wanted.

8 Technical Details

Elixir can manage up to 2 or 32 channels according to the license, and works with 64 bits floating-point at a maximum sample rate of 96, 192 or 384kHz, depending on the DAW and the license. Please see below.

9 Plug-in formats and platforms supported

Windows 7, Windows 8, Windows 10 : 64 bit - AAX : 64 bit (ProTools 10 or later required) - VST : 64 bit - VST3 : 64 bit

macOS 10.12 (Sierra), macOS 10.13 (High Sierra), macOS 10.14 (Mojave), macOS 10.15 (Catalina), macOS 11 (Big Sur), macOS 12 (Monterey): - AAX : 64 bit (ProTools 10 or later required) - VST : 64 bit - VST3 : 64 bit - AU : 64 bit

9.1 Elixir AAX Native Specifications:

Elixir Essential * Support up to 12 stages * Support up to 192 KHz * Support up to 32 channels

Elixir Session * Support up to 12 stages * Support up to 96 kHz * Support up to 2 channels

9.2 Elixir AU, VST and VST3 Native Specifications:

Elixir Essential * Support up to 12 stages * Support up to 384 KHz * Support up to 32 channels

Elixir Session * Support up to 12 stages * Support up to 96 KHz * Support up to 2 channels

9.3 Elixir - 1 Stage AAX DSP Specifications:

- Support only 1 stage
- Support up to 192 KHz
- Support up to 8 channels