

# **Pure Limiter**

FLUX:: Immersive

2/6/23

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# 1 Pure Limiter

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Pure Limiter makes transparent limiting easy; a dramatic increase of the average audio level can now be accomplished without damaging the perceived audio quality, with the exquisite proprietary Flux:: technology generating a release envelope assuring that no artifacts on the processed sound are produced. Unless you use it as a special effect, Pure Limiter should always be in the very last stage of your audio processing chain.

To make the setting even easier, the Pure Limiter also features two display modes, when mode A is engaged, both original and limited waveforms are displayed. The Mode B displays the limited waveform, the limiter action and the histogram of the release value which is especially useful when running in advanced mode. All display meters are peak-meters featuring a peak hold.

## 1.1 Input Level Meter(1)

from -96 dB to 0 dB

## 1.2 Output Level Meter(2)

from -96 dB to 0 dB

## 1.3 Limiting Level Meter(3)

from 0 dB to -12 dB

## 1.4 Input Gain (4)

Unit: dB

Value Range: -12 / +12

Step: 0.01.

Default Value: 0 dB.

Sets the gain applied to the dynamic processing input. ## Threshold (5) Unit: dB

Value Range: -12 / 0

Step: 0.01.

Default Value: 0 dB

Sets the threshold of the limiting action. This value is displayed into the input peak meter.

## 1.5 Knee (6)

Unit: dB

Value Range: 0 / +12

Step: 0.01.

Default Value: 0 dB

Sets the smoothness of the transmission curve for the limiting action. The curve is smoothed above the threshold value. The transition range between the linear transfer to the fully limited transfer is set by the knee value.

## 1.6 Output Gain (7)

Unit: dB

Value Range: -12 / +12

Step: 0.01.

Default Value: 0 dB

Sets the global gain applied to the dynamic processing output.

## 1.7 Link Knee (8)

When enabled the knee value reflects the threshold value. Setting the threshold also sets the knee.

## 1.8 Auto Knee (9)

The knee is automatically defined according to your settings and may vary according to the audio material.

## 1.9 Mode (10)

Default Value: Auto.

Three modes are available for the envelop of the dynamic processing.

Manual corresponds to the value you have set.

Auto enables our specific algorithm to generate a signal dependent value to avoid typical pumping effects.

Advanced will allow you to tweak the automatic mode.

## 1.10 Release Maximum (11)

Unit: ms

Value Range: 1.75 / 12000

Step: variable.

Default Value: 3000 ms

Sets the manual release value and the maximum release value when in Advanced Mode.

## 1.11 Release Minimum (12)

Unit: ms

Value Range: 0.75 / 11999

Step: variable.

Default Value: 60 ms

Sets the minimum release value when in Advanced Mode.

## 1.12 Dynamic Velocity (13)

Unit: %

Value Range: 0 / 100

Step: variable.

Default Value: 100%

Apply a release to the extracted real time dynamic informations.

100% Mean full velocity (no release).

## 1.13 Dynamic Factor (14)

Unit: x

Value Range: 0 / 3.0

Step: variable.

Default Value: 1

Amplify or dim the extracted real time dynamic informations.

## 1.14 Dynamic High Pass Filter (15)

Unit: Hz

Value Range: 10 / 21900

Step: variable.

Default Value: 10 Hz

Sets the Lowest frequency feeding the release control section.

## **1.15 Dynamic Low Pass Filter (16)**

Unit: Hz

Value Range: 110 / 22000

Step: variable.

Default Value: 22000 KHz

Sets the highest frequency feeding release control section.

## **1.16 Channels Link (17)**

% of channels linkage

Unit: Percents (%)

Range: 0 to 100

Min. Steps: 1

Default Value: 50%

## **1.17 Display A /B (18) (19)**

Toggle display of the dynamic curve

## **1.18 Make Up (20)**

When engaged, the output gain is increased from the threshold value.

## **1.19 Bypass (21)**

Default Value: Off. The inputs are directly routed to the outputs.

## **1.20 Lookahead (22)**

Unit: ms

Value Range: 0 / 10

Default Value: 10

Step: 1 sample



This delay line allows to decrease the gain before the audio peak arrives. It's a key point to avoid audio distortion. Note that changing this delay value may create clicks. Note also that this delay value is applied to the processed signal and it increases the processing latency.

## **1.21 Auto Lookahead (23)**

The look ahead is automatically defined according to other settings and may vary according to the audio material.

## **1.22 Diff (24)**

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

Default Value: Off

## **1.23 Dynamic Filter Solo (25)**

When engaged, the signal feeding the dynamic extraction section is monitored. This allows to control which part of the audio spectrum is used to compute the release value.

## **1.24 Loaded Preset Display (26)**

A plug-in features two preset sections; A & B. Clicking on the slot of a specific section reaches the preset bank. The main display is now a preset list in which you can select the preset you want to recall or save in the specific preset section. Two different presets must be used if you plan to use the morphing capability of FLUX Plug-in.

## **1.25 Save (27)**

Save replaces the selected preset by a new one under the same name featuring the current settings. If you want to keep an existing preset without your new modifications, just select an empty place into the preset list, enter a new name for this modified preset featuring the current settings and press Save.

## 1.26 Recall (28)

Once a preset is selected from the preset list it must be explicitly loaded into section A or section B by using the recall button. A preset is effective only after it has been recalled.

## 1.27 Copy A Copy B (29)

The current parameters of a section are copied to the other one. The section A or B is re-initialized with the current values and the morphing slider is parked at 100% of the corresponding section.

## 1.28 Morphing Slider (30)

This horizontal slider has no unity nor specific value display. It allows to morph current settings between two loaded presets. A double-click on one side of the slider area toggles between full A and full B settings. The results of an in-between setting can be saved as a new preset.

## 1.29 Automation (31)

Default Value: Off

When this button is disabled, all the plug-in parameters values are recorded when writing automation. The morphing slider is ignored.

When reading automation, if this button is disabled, all the plug-in parameters are controlled by the host automation except the morphing slider.

When this button is engaged, all parameters are recorded when writing automation uncluding the morphing slider.

When this button is engaged, ONLY the morphing slider value is applied when reading automation.

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

## 1.30 Preset Management Access (32)

## 2 Plug-in Settings

Pressing the cogwheels in the top right corner opens a settings window providing information about the plug-in version/build, a direct access button to the user manual, as well as setup for latency report and OSC (Open Sound Control). OSC is available in Pure Limiter only, and is not supported in Pure Limiter Studio Session.

# 3 Specifications

## 3.0.1 Processing Specifications - Pure Limiter

- Up to 8 channels Input/Output.
- 64-bits internal floating point processing.
- Sampling rate up to 384 kHz DXD (Pyramix and Ovation MassCore/Native).
- Sampling rate up to 192 kHz for Native (AU/VST/VST3/AAX/AAX AudioSuite).

## 3.0.2 Processing Specifications - Pure Limiter Studio Session

- Mono/Stereo Input/Output.
- 64-bits internal floating point processing.
- Sampling rate up to 96 kHz.

## 3.0.3 Licence Requirements

In order to use Pure Limiter or Pure Limiter Studio Session, one of the following is required:

- An iLok.com user account (the iLok USB Smart Key is not required).
- A Flux:: USB Dongle (Available in our online store).

# 4 Compatibility

## 4.0.1 Pure Limiter

## 4.0.2 Windows - 10, 64 bits only.

- VST (2.4) in 64 bit
- VST3 (3.1) in 64 bit
- AAX Native/DSP/AudioSuite, all in 64 bit\*
- Waves WPAPI Native/Soundgrid in 64 bit
- VS3\*\* Pyramix 10 and more in 64 bit and Ovation 6 and more
- AVID VENUE Systems

## 4.0.3 macOS (Intel and ARM) - 10.12 (Sierra) and more, 11 and 12.

- VST (2.4) in 64 bit
- VST3 (3.1) in 64 bit
- AU in 64 bit
- AAX Native/DSP/AudioSuite, all in 64 bit\*
- Waves WPAPI Native/Soundgrid in 64 bit
- AVID VENUE Systems

\*\* VS3 for Pyramix & Ovation Native/MassCore sold only through Merging Technologies and authorized dealers.

# A Release Notes

## A.1 Build 23.1.0.50251 - All plugins

### A.1.1 New features

- New plugins Evo Compressor, Evo Touch and Evo EQ.
- VST3 support
- ARM support for AAX, AU and VST3
- Plugins are now resizable
- Elixir now supports 32 channels
- Alchemist, BitterSweet, Epure, Pure Compressor, Pure DCompressor, Pure Expander, Pure DExpander, PureLimiter, Solera, Syrah now support 16 channels

### A.1.2 Bugs fixes

- All plugins - Preset Manager - Update user preset do not work
- All plugins - Preset manager - Crash or freeze when saving a preset
- All plugins - UI may be black on Intel UHD 630 graphical cards
- All plugins - AU/VST3 - Preset manager - Default preset is not applied to parameters at plugin instantiation
- All plugins - AAX - Crash with OSC when changing fx slot in Pro Tools
- All plugins - AU - Logic Pro - Automation of boolean/integer parameters broken
- All plugins - AU - Plugins crash in Da Vinci Resolve
- All plugins - DaVinci Resolve - VST - UI is truncated
- All plugins - Streamlabs - Plugins do not work
- All plugins - Licensing issue in DaVinci Resolve and GarageBand
- Alchemist - The range parameter works only for the 1st band
- BitterSweet - Not possible to tweak the Output gain after unlinking it

- BitterSweet - Output gain not reloaded properly when the link is disabled
- BSPro - some modes are not accessible due to GUI issue
- Epure - macOS - Bad graphic scale initialization at 2&4FS
- Evo Channel - Meter reference is not saved
- Syrah - Crash when selecting preset “Static fast compression”
- TRAX Tr - When the link is activated, the Formant slider does not have the expected audio effect
- TRAX Tr - ProTools - Issue in AudioStudio when the modulation is enabled
- VerbSession/VerbSession Studio Session and BSPro StudioSession - Pyramix - VST crash when instantiated
- Verb/Verb Studio Session - Crash when reloading session having 2 instances

### **A.1.3 Known issues**

- All plugins - VST - GUI issue in Izotope Ozone and RX
- All plugins - AAX - Preset manager - Default preset is not applied to parameters at plugin instantiation
- Elixir - Latency not properly compensated after changing stage parameters value in VST and AudioUnit
- TRAX tr - Learn function returning wrong values
- VerbV3 - HOA 3rd order not working properly

## **A.2 Build 21.12.0.50123 - All plugins except TRAX and StudioSession**

### **Bug fixes**

- All plugins AudioUnit - GUI issue with Hdpi displays on macOS Monterey
- All plugins VST - Plugin scan freeze in Wavelab 11 on Mac M1 machines
- All plugins VST - Crash in Adobe Audition on macOS
- All plugins VST macOS - Fix crashes with Ableton live
- Elixir - Automation is not read for toggle parameters.
- Elixir - Crash when clicking on the settings button on Session version

- Elixir - Several fixes on the UI
- Elixir - Windows AAX - Refresh issue with two instances in ProTools
- HEar - Bypass is working in AAX
- HEar AAX - Crash when doing offline bounce on macOS
- HEar AAX - Crash when editing the matrix on macOS
- HEar AAX - Stereo - Change on Matrix are not applied until we change the preset
- HEar AudioUnit - Ableton crashes when inserting a second instance

### **A.3 Build 21.11.0.50107 (HEar, IRCAM Verb)**

**NOTE: CURRENTLY NOT COMPLIANT WITH ABLETON LIVE MACOS**

#### **Improvement**

- HEar - 5.1.4 & 5.0.4 now available

#### **Bug fixes**

- HEar - Fix meters refresh issue
- HEar - No verb on some presets
- HEar - Protools crashes when doing offline bounce on macOS

### **A.4 FLUX:: Immersive - Plugins (including IRCAM Tools) 21.09**

This release includes updates for all FLUX::Immersive plugin processing products with the exception of EVO Channel, Epure, IRCAM Trax, Studio Session.

**NOTE: CURRENTLY NOT COMPLIANT WITH ABLETON LIVE MACOS**

#### **Major optimizations**

- Apple computers Big Sur (new M1 chips) AU validation
- Important updates to the Ircam Verb + Session
- Overall better handling of multichannel track setups such for Atmos. (Ircam Hear, Verb and more)
- Automatic detection of track format / channel order for DAWs when possible.



### A.4.1 Build 21.9.0.50083

#### Bug fixes

- Apple computers Big Sur (new M1 chips) AU validation failing
- Empty GUI when close/reopen plugin - Windows 10 - UHD630 graphics
- AudioUnit in Reaper - do not process audio when offline bounce
- Default preset not loaded correctly on instantiation of Verb + Verb Session
- Evo.Channel on Retina - Input and Output Sliders badly scaled
- Incompatible AudioUnit issue in Apple Final Cut Pro
- Plugins: Recall Preset Flags (e.g. “All but setup”) recall always everything
- Preset Manager - UI issue with small plugins when a preset has been created
- Ircam Verb Session reload in VST with audio interruption
- VST Plugins Session not correctly reloaded if it integrate an IO configuration change
- Verb session - Dry/wet not applied in offline render
- Verb v3 Atmos crash on AAX
- Verb: AU validation failed on Apple M1
- Verb: LFE not disabled by default on ProTools
- Verb: Recall Preset may be not correct with double click inside the preset manager
- Verb: disabled channel is not re-injected according to dry/wet parameter (100 % wet means muted)
- Verb: init issue with Nuendo
- AAX - Some plugins - Crash on Mac / No GUI on Windows
- Overall reliability / stability fixes.
- Plugin size not correct
- Potential plugins crash when opening UI

## A.5 FLUX:: Immersive - Plugins (including IRCAM Tools) 20.12

This major release includes updates for all **FLUX::Immersive** products with the exception of IRCAM Spat V3 legacy product. Please refer to Spat V3 - Spat Revolution crossgrade options.

#### Major optimizations

- HiDPI / Retina support + display enhancements and fixes
- Page Table unification for **Avid Control**, S1, S3, S4, S6 and S6L.
- OSC Control for plugins.
- **IRCAM Verb** support for Dolby Atmos, Multichannel support up to 16 channels
- **IRCAM Hear** - Multichannel stability improvement, Now up to 10 channels. (Dolby Atmos 7.1.2)
- **IRCAM Tools** - Audio I/O Matrix and Multichannel enhancement

- Most plugins support of 8 channel.
- 16 channel support for **Bittersweet Pro, Evo In and Evo Channel**

### **A.5.1 Build 20.12.0.49880**

#### **Bug fixes**

Core:

- BPro - Latency report issue (AAX)
- IRCAM TRAX Tr - Latency report issue
- IRCAM Verb - Wrong initialization value for Reverb density
- IRCAM Verb -Dry signal still goes out in disabled channels when wet is 100%
- All Pure Dynamics PI + Alchemist - Wrong Thresholds initialization values
- AAX “monolithic” are broken like Hear, TRAX etc...
- Almost all AAX plugins don’t reload parameters from 47856 version session.
- Pure Limiter - Diff feature bypassed the input gain.
- Pure Limiter - Inverted sidechain filters.
- Any plugin except Evo Channel - Research Presets resets when click on a preset.
- Evo channel - Wrong values when reloading touch section.

UI:

- Current preset name disappear on re-opening GUI or session

## **A.6 Known Issues**

- Wavelab “Sample rate not supported” when a plugin is inserted on a clip, track or output section.
- TRAX Tr - Learn frequencies display wrong values (AAX only).
- Hear - Internal config labels change when modify LFE input config from routing matrix.
- When using OSC on a plugin in Pro Tools, a crash will occur if you change/move FX insert slots