

**Audiority LDC2 Light Driven Compander**



# Audiority LDC2 Light Driven Compander Instruction Manual

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**audiority**

**Audiority LDC2 Light Driven Compander**



## Product Specifications

- 17 real-time optical circuit models
- Fixed ratio (4:1) Optical Compressor
- Maximum compressor gain reduction: 40dB
- Fixed ratio (3:1) Optical Expander
- Maximum expander gain reduction: 30dB
- Independent side-chain gain and high-pass filters
- Diode-based preamplifier

### (AAX, AU, CLAP, VST2, VST3)

produced by Luca Capozzi (Audiority), February 2019.

### Current Manual version: v1.3

LDC2 is an analog-modelled optical compressor and expander with exchangeable optical circuits, a solid-state preamplifier and an output stage, giving you a unique compression character.

LDC2 provides smooth and warm dynamics processing for tracking, mixing, mastering and live performances. Please, read carefully both product specifications and system requirements before purchasing any Audiority products.

### Credits

- **Code & DSP:** Luca Capozzi (Audiority Srls), February 2019.
- **GUI Design:** Luca Capozzi

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## Specifications

- 17 real-time optical circuit models
- Fixed ratio (4:1) Optical Compressor
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- Maximum expander gain reduction: 30dB
- Independent side-chain gain and high-pass filters
- Diode based preamplifier

## **System Requirements**

### **PC**

- Windows 7 64bit or later
- Intel i5 or equivalent
- 4 GB RAM
- Screen resolution: 1024×768
- VST2, VST3, AU, CLAP 64-bit host
- PT11 or higher, AAX 64-bit host

### **MAC (Intel)**

- OSX 10.13 or later
- Intel i5 or equivalent
- 4GB RAM
- Screen resolution: 1024×768
- VST2, VST3, AU, CLAP 64-bit host
- PT11 or higher, AAX 64-bit host

### **MAC (Silicon)**

- macOS 11.0 or later
- M1 or higher
- 4 GB RAM
- Screen resolution: 1024×768
- VST2, VST3, AU, CLAP 64-bit host
- PT11 or higher, AAX 64-bit host

## **FILE LOCATIONS**

### **Mac**

All presets, licenses, IR files and settings are located in:  
/Users/Shared/Audiority/

AAX, CLAP and VST plugins will be placed in their own Audiority sub-folder located in:

- AAX: /Library/Application Support/Avid/Audio/Plug-Ins/Audiority
- CLAP: /Library/Audio/Plug-Ins/CLAP/Audiority

- VST: /Library/Audio/Plug-Ins/VST/Audiority
- VST3: /Library/Audio/Plug-Ins/VST3/Audiority

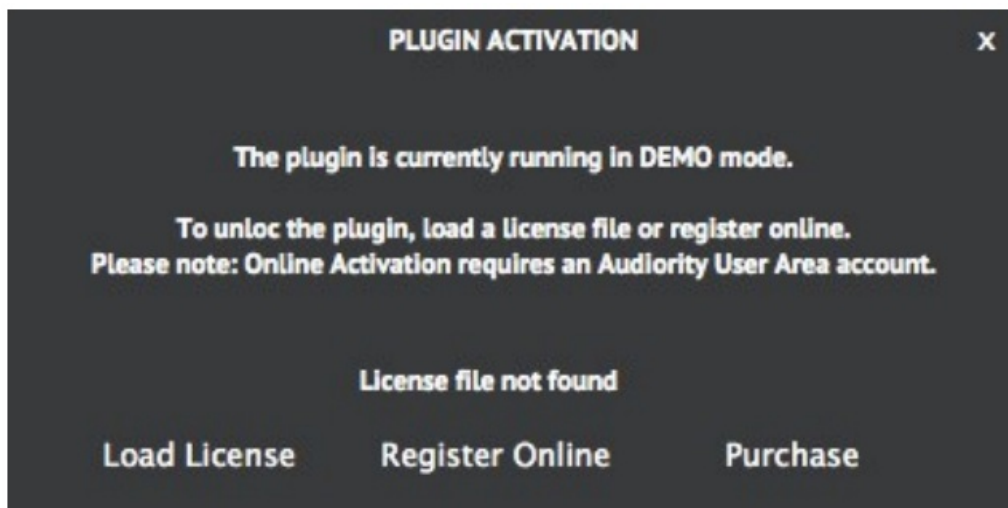
## PC

All presets, licenses, IR files and settings are located on the:  
C:\Users\Public\Public Documents\Audiority

AAX, CLAP and VST plugins will be placed in their own Audiority sub-folder, usually located in:

- AAX: C:\Program Files\Avid\Audio\Plug-Ins\Audiority
- CLAP: {Your CLAP Path}\Audiority
- VST: {Your VST Path}\Audiority
- VST3: {Your VST3 Path}\Audiority

## PLUGIN ACTIVATION



Once you install and open the plugin for the first time, it will be in Demo Mode until a license file is loaded. In Demo Mode, the plugin will output 3 seconds of silence every minute. You can activate the plugin either OFFLINE or ONLINE.

### OFFLINE ACTIVATION

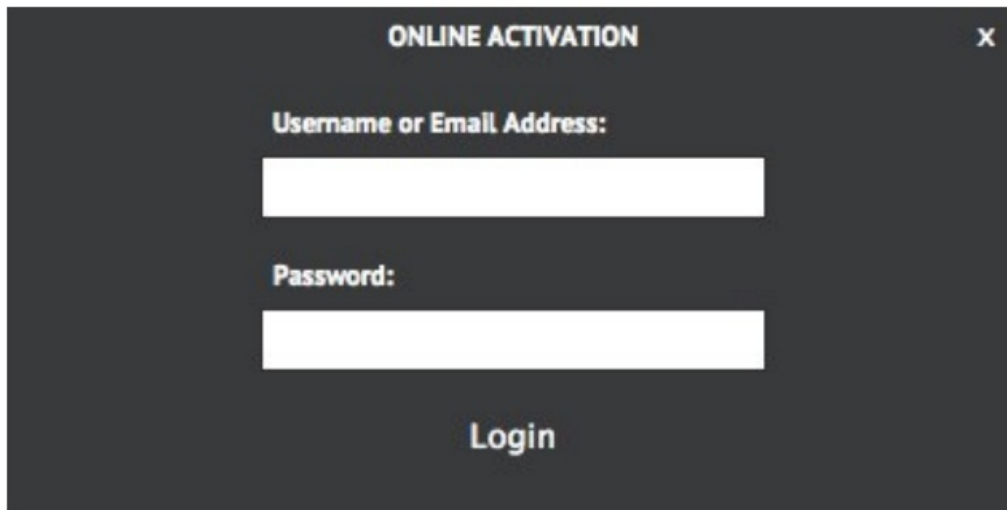
If you purchased the plugin from our site, you should have received an email to download the installers and the license file. Save the license file you got with your purchase email (or via our User Area) anywhere on your computer.

Then, to activate the plugin, click on the Audiority logo and select “Register”. The Registration window will pop up allowing you to load the license file you got while purchasing the plugin by clicking the “Load License” button.

**NOTE:** If you purchased the plugin from one of our dealers, please check the “USER AREA AND REDEEM CODES” section below.

### ONLINE ACTIVATION

If you are registered to our User Area, then you can activate the plugin online.

A dark-themed window titled "ONLINE ACTIVATION" with a close button (X) in the top right corner. The window contains two input fields: "Username or Email Address:" and "Password:". Below the input fields is a "Login" button.

ONLINE ACTIVATION X

Username or Email Address:

Password:

Login

Insert your Username (or email address), and your password and click the “Login” button. The license file will be automatically delivered to your computer and the plugin will be activated.

## USER AREA AND REDEEM CODES

If you purchased from one of our dealers, you should have received an email with a redeem code. This code is required to deposit a license in your User Area account and let you download the license file or activate the plugin online.

If you don't have a User Area account yet, please follow these steps:

1. Go to <https://www.audiority.com/register> and fill out the signup form.

**IMPORTANT:** Please be sure to register with the e-mail address you use for your purchases, otherwise, your products will not show. Since we use reCAPTCHA for registration only, please temporarily disable any ad blocker you are using.

**Username**

Heisenberg58

**First Name**

Walter

**Last Name**

White

**Purchase E-mail Address**

w.white@pollos.com

**Password**

\*\*\*\*\*

**Confirm Password**

\*\*\*\*\*



I read and agree to the [Privacy Policy](#) and [Terms of Use](#)



I'm not a robot



reCAPTCHA  
[Privacy](#) - [Terms](#)

2. Once registered, log in to your account by clicking the User Area section of our site. Click the REDEEM section of your account and paste the code you received via email from our dealer.



[About](#)



[My Plugins](#)



[My Sample Libraries](#)



[My Soundbanks](#)



[Redeem](#)



[Privacy](#)

Insert your Redeem Code here

AUDPLG0-XXXXX-XXXXX

Submit

3. After submitting the code, a license will be deposited in your account and will be shown in the “MY PLUGINS” section of your User Area.

## GRAINSPACE (V2.0)

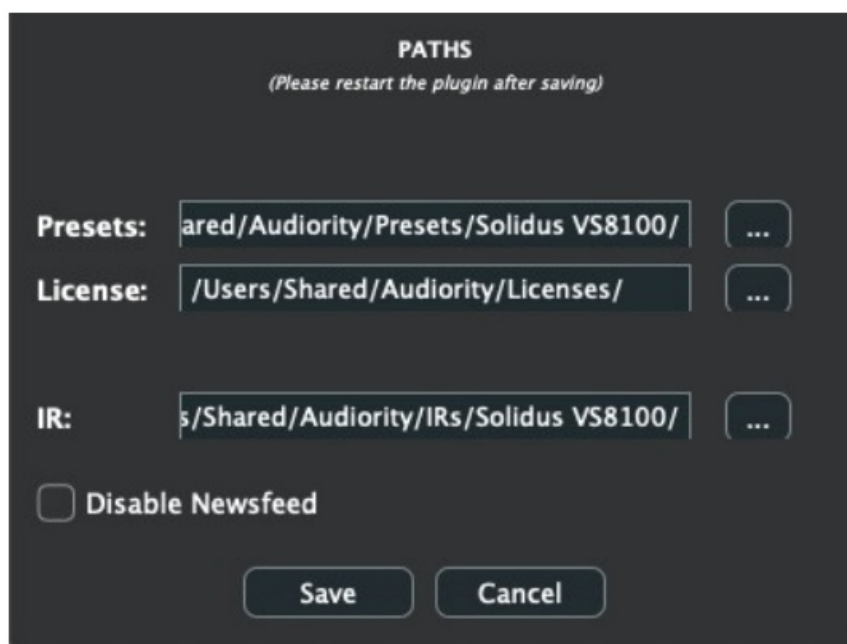
Purchase date: 25 Mar 2017 - Order Nr.: [REDACTED]

Status: Active - License Downloads Left: 6



[WIN Installer](#)
[MAC Installer](#)
[License File](#)

- Now you can click “License File” and save the license anywhere on your computer and ready to be loaded through the plugin registration window. You can also skip this part and activate your plugin online (see previous section of this manual).



Selecting “Settings” from the logo menu allows you to change the path for Presets and License folders. Note: Please do not move the Settings folder from its default location.

## COMPRESSION AND EXPANSION

Before going deep into optical compression and expansion, let’s have a recap about what compression and expansion are. A compressor is used to reduce the dynamic range, the difference between the loudest and quietest levels of a signal. A compressor attenuates the level of the loudest sounds above a given threshold. This is useful to prevent a sudden level increase in an instrument from jumping out of a mix. Some compressors include a make-up gain circuit to compensate for the gain reduction applied to the signal, bringing up its quieter parts, and making the sound more “sustained”.

An expander is used to INCREASE the dynamic range, by attenuating the level of the quietest sounds below a given threshold. This is often used to reduce the noise floor of a signal.

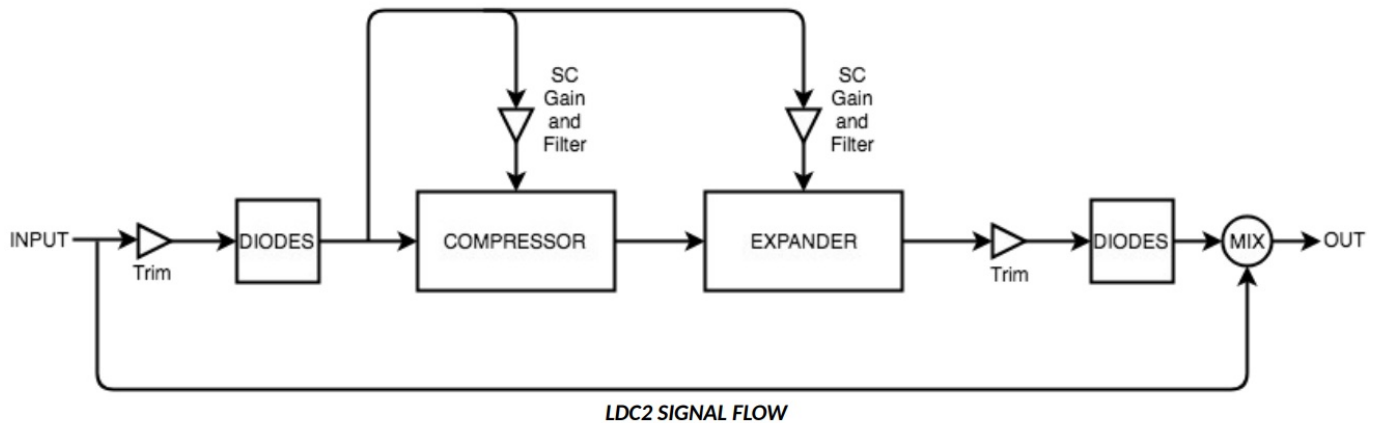
In both compressors and expanders, the incoming signal is split: a copy goes to a variable amplifier and another is sent to a separate circuit (a side-chain) where the signal is measured and used as a control signal to apply the required gain adjustment to the amplifier.

In optical compressors and expanders, the signal going in the side-chain is converted into light and the intensity of that light is measured by an optical sensor (a sort of variable resistor) that controls the amount of gain reduction. A louder signal means a brighter light so a higher gain reduction.

Earlier optical compressors used a photocell made of an electro-luminescent panel coupled with a pair of photo-

resistors. This early technology has the downside effect of being unable to discharge the light from the electro-luminescent panel in a reasonable time, resulting in a nice non-linear compression. Later, the same technology was implemented via an LED (Light Emitting Diode) coupled with a variable photo-resistor, providing more precision and predictability compared to the past, but still retaining a non-linear behaviour. Optical compressors and expanders rely on the response of the photocell to establish the timing coefficients, that's why most of them don't have dedicated controls for Attack and Release.

## HOW LDC2 WORKS



In LDC2, the input signal goes into a preamplifier circuit that levels the signal by  $\pm 24$  dB. A pair of protection diodes will gently saturate the signal while approaching 0dB and send it to the compressor and, then, to the expander. A copy of the signal going into the compressor is used as side-chain input for BOTH the compressor and the expander, whose independent response is set by the chosen optical circuits. The processed sound is then sent to the output amplifier, where it can be adjusted by  $\pm 24$ dB and mixed with the unprocessed signal.

## LDC2 – TOOLBAR



## COMPRESSOR / EXPANDER PARAMETERS

- **SC GAIN** Adjust the level of the side-chain signal by  $\pm 24$ dB. This will NOT affect the level of the processed audio signal.
- **SC FILTER** Filters the low frequency of the side-chain signal, altering the frequency response of the dynamics processor.
- **COMPRESS / EXPAND** Adjusts the amount of compression/expansion applied to the input signal.



- **OPTICAL CARD** Changes the optical circuit for either the compressor or the expander.

## PREAMPLIFIER PARAMETERS

- **INPUT TRIM** Adjusts the input signal going in the compressor stage by +/- 24 dB. A protection diode will gently saturate the signal near 0dB.
- **MIX Balances** the unprocessed (Dry) input signal with the processed (Wet) one.
- **OUTPUT TRIM** Adjusts the output signal coming from the expander stage by +/- 24dB. A protection diode will gently saturate the signal near 0dB.
- **INPUT/OUTPUT METER TRIM** Adjust the 0VU reference level of the VU Meter. By default the meters are calibrated to -18dB, leaving plenty of headroom for further processing.

## RIGHT-CLICK OPTIONS

**PARAMETER LOCKING:** Each one of the knobs and the optical card menus can be locked so it won't change its value. This is very useful when you load the plugin on an AUX/SEND channel. To lock a knob, simply RIGHT CLICK it and select LOCK PARAMETER.

## CHANGELOG

- **v1.3 (March 2024)**
  - **NEW:** Updated Framework
  - **NEW:** CLAP plugin format
  - **NEW:** AAX Native Silicon
  - **FIX:** The Mac installer was asking for Rosetta on Silicon Macs
  - **FIX:** The Windows installer could erase the User folder when updating
  - **BREAKING CHANGE:** Minimum macOS version is now 10.13
- **v1.2 (March 2021)**
  - **NEW:** Updated Framework
  - **NEW:** Universal 2 Binary for Apple Silicon Macs
  - **FIX:** Silence triggered randomly in some configurations
  - **CHANGE:** HQ is now global (per session)
- **v1.1 (November 2019)**
  - **NEW:** Mac OSX Catalina support
  - **NEW:** Notifications system
  - **FIX:** Wrong About window size
- **v1.0.2 (March 2019)**
  - **FIX:** Mac installer replacing wrong presets folder
  - Minor framework update
- **v1.0.1 (February 2019)**
  - **FIX:** Oversampler not correctly initialized on HQ changes
- **v1.0 (February 2019)**
  - Original release

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Last updated on Jan 25th, 2023

#### **Thank You**

We wanna thank you for buying the Audiority LDC2 – Light Driven Compander plugin.

We hope you will enjoy it as much as we did.

If you have any questions, concerns, technical issues or even just say 'Hello', get in touch with us at:

[info@audiority.com](mailto:info@audiority.com) or check our site at [www.audiority.com](http://www.audiority.com)

Cheers, Luca

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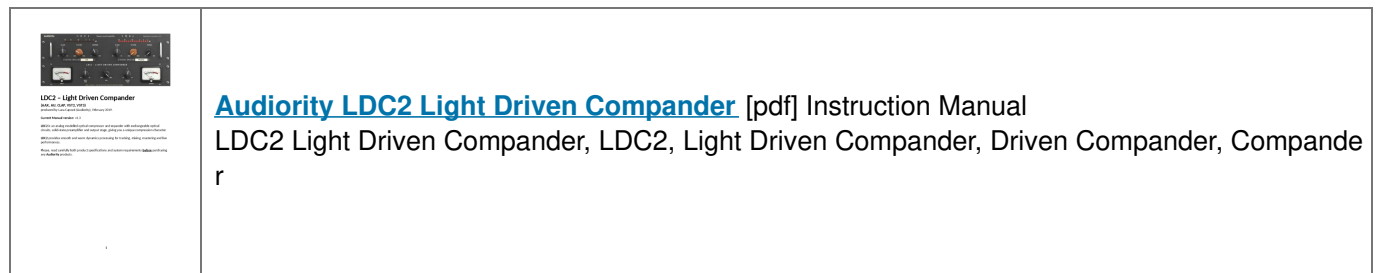
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## Frequently Asked Questions

- **Q: How do I change the optical circuit in LDC2?**
  - A: Use the “OPTICAL CARD” parameter in the toolbar to select a different optical circuit for either the compressor or expander.
- **Q: Can I adjust the side-chain signal level in LDC2?**
  - A: Yes, you can adjust the side-chain signal level using the “SC GAIN” parameter by up to +/- 24dB.
- **Q: What is the purpose of the diode-based preamplifier in LDC2?**
  - A: The diode-based preamplifier gently saturates the signal near 0dB, providing a unique tonal character to the input signal.

## Documents / Resources



## References

- [!\[\]\(c44db1e92ba1244b2894d325c806ff8a\_img.jpg\) Audiority - Professional Audio Plugins VST, AAX, AU, CLAP](#)
- [!\[\]\(013e914f6af0e7d8e9ce37222ef64968\_img.jpg\) Audiority](#)
- [!\[\]\(5047bf073d06e2a80c3167582fefe8a7\_img.jpg\) Audiority - Professional Audio Plugins VST, AAX, AU, CLAP](#)
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