



LDC2 – Light Driven Componder

(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, solid-state preamplifier and 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.

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produced by Audiority, February 2019.

Credits

Code & DSP: Luca Capozzi (Audiority Srls), February 2019.

GUI Design: Luca Capozzi

Published by Audiority Srls

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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

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, license, 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

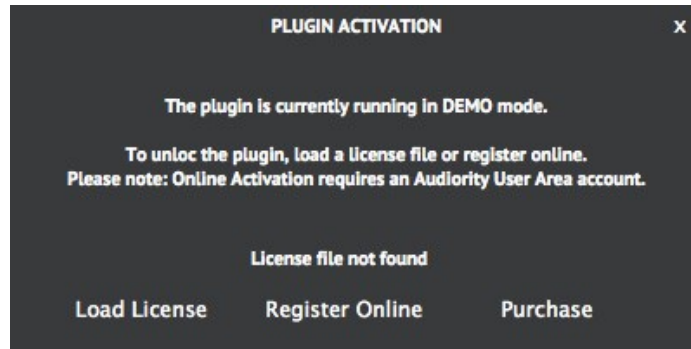
PC

All presets, license, IR files and settings are located to:
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

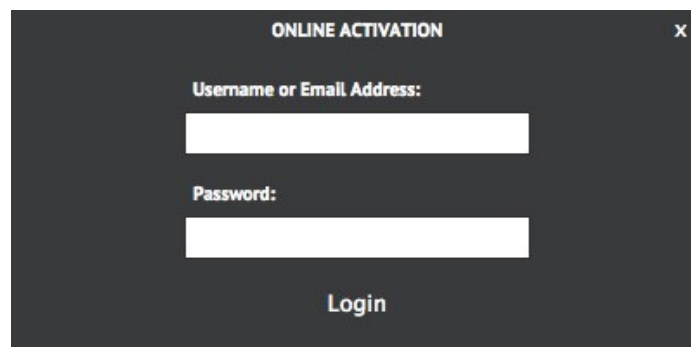
If you purchased the plugin from our site, you should have received an email to download the installers and the license file. Save the license file you got with your purchase email (or via our User Area) anywhere on your computer.

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.



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

USER AREA AND REDEEM CODES

If you purchased from one of our dealers, then 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 an 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

First Name

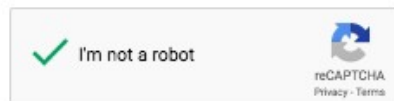
Last Name

Purchase E-mail Address

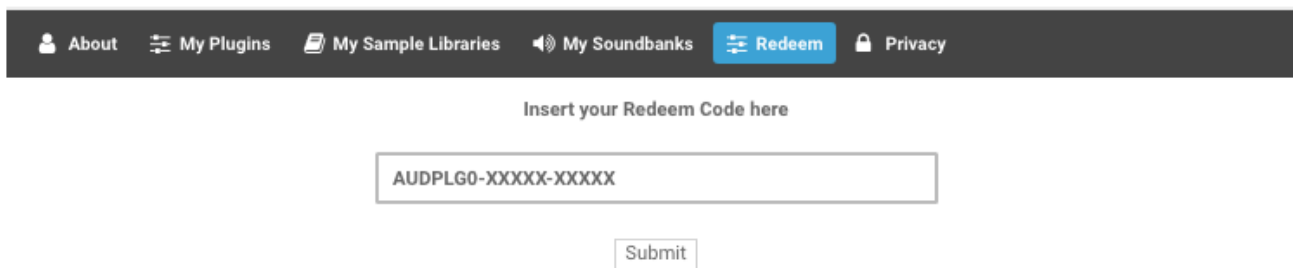
Password

Confirm Password

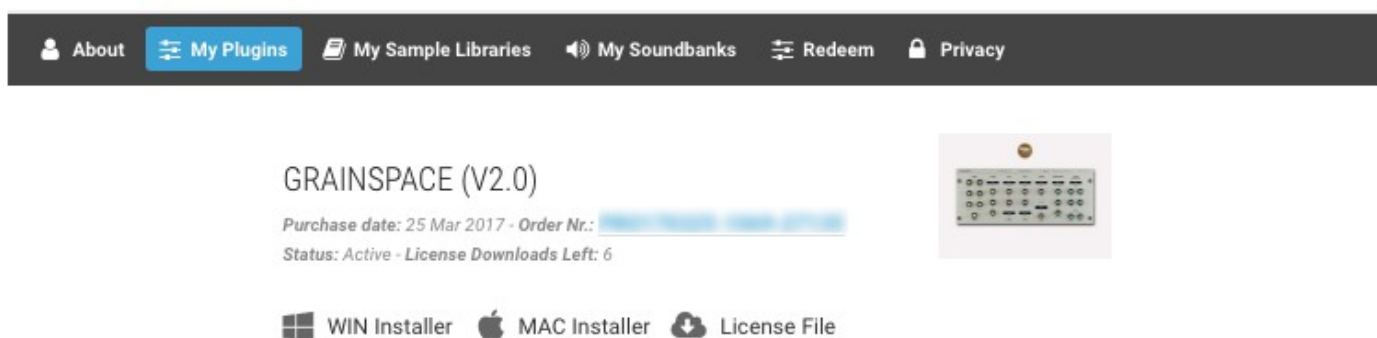
I read and agree to the [Privacy Policy](#) and [Terms of Use](#)



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.

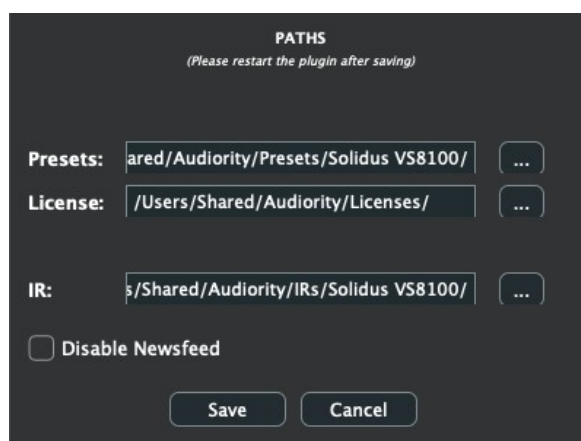


3) After submitting the code, a license will be deposited in your account and will be shown in “**MY PLUGINS**” section of your User Area.



4) 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).

USER PATHS SETTING



By selecting “**Settings**” from the logo menu, you can 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. Basically, 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 to jump out of a mix. Some compressors include a make-up gain circuit to compensate the gain reduction applied to the signal, bringing up its quieter parts, making the sound more "sustained".

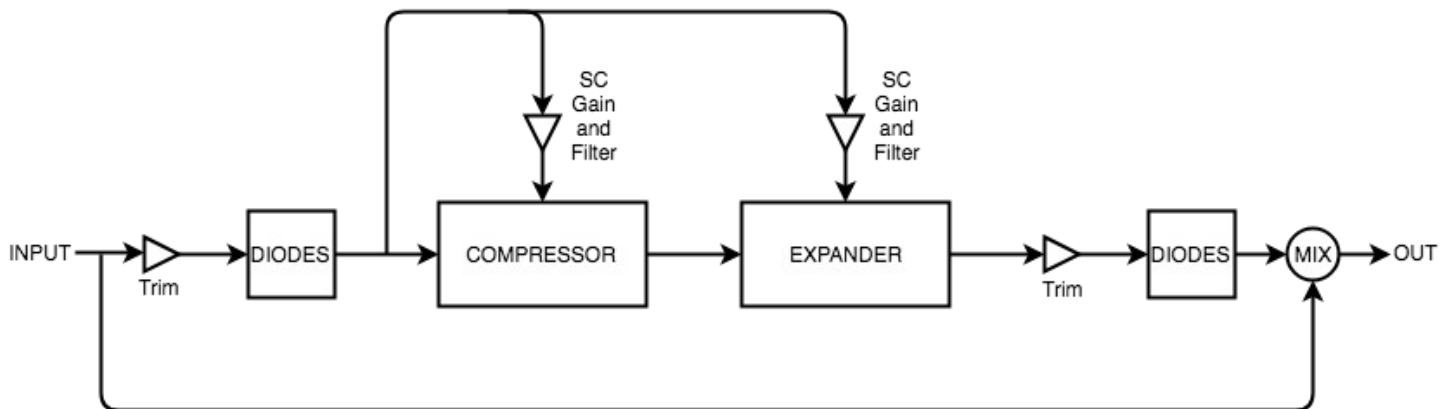
An expander is used to **INCREASE** the dynamic range, by attenuating the level of the quietest sounds **below** a given threshold. This is often used to reduce the noise floor of a signal.

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 an 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 to be unable to totally discharge the light from the electro-luminescent panel in a reasonable time, resulting in a nice non-linear compression. Later in time, the same technology has been implemented via a 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.

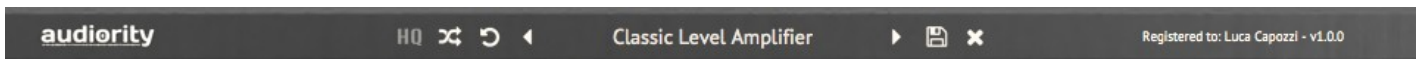
HOW LDC2 WORKS



LDC2 SIGNAL FLOW

In **LDC2**, the input signal goes into a preamplifier circuit that levels the signal by +/- 24dB. A pair of protection diodes will gently saturate the signal while approaching 0dB and sent 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, which 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 +/- 24dB and mixed with the unprocessed signal.

LDC2 - TOOLBAR



The Toolbar allows you to manage the plugin presets, register the plugin and set some global parameters. By clicking the **AUDIORITY** logo, in the top left corner of the Toolbar, you'll be able to visit our website and social profiles, register the plugin, change the interface size and customize the paths for license and preset files. The **HQ** button will enable oversampling, useful to reduce aliasing when the signal saturates. Use the **Randomize** and **Reset** buttons to experiment with random presets or restoring it to its saved version.

LDC2 - PARAMETERS



COMPRESSOR / EXPANDER PARAMETERS

- SC GAIN** Adjust the level of the side-chain signal by +/- 24dB. 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 +/- 24dB. 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: Mac installer was asking for Rosetta on Silicon Macs
- FIX: Windows installer could erase 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

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

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

info@audiority.com

or checkout our site at www.audiority.com

Cheers,
Luca

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