Introduction

This manual describes the features and operation of the Pulsar Echorec effect processor. To be sure you understand how to use your plugin and understand all the subtleties, please read it in its entirety.

The information contained in this manual is believed to be correct at the time of publication. However, if an error has unfortunately crept into its contents, please let us know.

IMPORTANT: The prolonged use of amplified instruments, speakers or headphones may cause permanent hearing loss. Ensure you to monitor your exposure level, and take regular breaks. In case of tinnitus or suspected hearing loss, please consult an ENT specialist.
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Welcome

Our experience

Thank you for choosing Pulsar quality!

With more than 15 years’ experience in plugin development for the biggest names in the industry, we decided to create Pulsar to push the quality requirements of our products even further.

For each product, our quest for excellence requires us, never to rest on our technical achievements, and to expand our knowledge ever further.

Sound and science

With solid expertise in audio signal processing, but also in electronics, sound techniques and music practice, we take great care in modelling all the small details and imperfections of analogue equipment that make the difference between a "mathematical" sound result and rich, living and musical processing, and produce this famous "3rd dimension" sound so much in demand.

In addition, our close collaboration with music production professionals requires us to be rigorous in order to produce professional quality tools.

Our user interfaces

The user interface of a plugin is the link between the creative drive and the technical realization; it must therefore be clear, intuitive, and as pleasant as possible to use. We take great care to create the most beautiful and fluid interfaces possible, with an emphasis on intuitiveness.

The search for the right equipment

We modeled this processor with great care on a real Binson Echorec 2 unit in excellent condition, after listening and selecting from several units at our disposal.

The Pulsar Team
The Echorec

From the very beginning of music production, musicians and producers have sought to recreate artificial acoustic spaces, to virtually "transpose" their music out of the studio, and give it the living aspect of live music. The first spatialization effect used in the studio was the Echo, later called "delay".

The Echorec, by the Italian company Binson, is an analog delay processor, introduced in the late 1950s. Unlike other processors of the time, based on plastic magnetic tapes, the delay in the Echorec is produced using a metal magnetic drum, providing a larger bandwidth and greater temporal stability compared to most systems of the time.

Considered one of the best delay processors of the time, it has been used in the studio and sometimes on stage by many musicians and bands such as Pink Floyd (Syd Barrett & David Gilmour), Led Zeppelin (Jimmy Page), Hawkwind, and many others...

The Echorec will offer you:

- The sound of a legendary machine that has marked the history of music
- The unique ability to create rhythmic delays using its 4 read heads
- A delay of unequalled sound density, making it easier to place in the music
- The advantages of "organic" analog sound as well as the advantages of digital sound (presets, parameter automation, etc.)
Quick Start

Installation

The Echorec is available as a plug-in in VST2, VST3, AU and AAX formats for use with all major DAW software such as Live, Cubase, Logic, Pro Tools, etc.

Installation from the supplied installer is automatic. The installer takes care of copying the different plug-ins as well as presets, manual, etc. into the appropriate locations.

Note: If you are using the VST2 format in Windows, you will be asked by the installer to specify the installation folders for the 32-bit and 64-bit VST2 plug-ins respectively. The paths that seem most appropriate for your computer will be recommended by default, but we advise you to check them before completing the installation. If the plug-in is not installed in the same folder as your other possible plug-ins, your DAW software may not detect it.

Activation

All our plug-ins are protected by PACE’s iLok system. For correct operation, we recommend you to ensure that you have the latest version of the "iLok License Manager" software, available for free download at www.ilok.com.

They require:

- either an iLok 2 / iLok 3 hardware USB Key (which you can order online or buy from your music dealer)

- or a permanent internet connection on your workstation (iLok Cloud system)

If you choose the iLok Cloud system, it is necessary first of all to open a Cloud session on your computer by going to the "File > Open Cloud Session" menu of your iLok Licence Manager. If you choose an iLok 2 or 3 key, it is necessary to connect it to your computer before any operation.
when you purchase your software, you will receive:

- either a licence deposited directly onto your ilok account. Just go to the "Available" tab and drag it to the destination of your choice (here CLOUD for a cloud license, or iLok_Pulsar for an iLok 2 or 3 key)

- or an activation code. Simply copy it into the "Licenses > Redeem activation code" menu to receive it on your account, and drop it off at the destination of your choice (CLOUD or iLok key 2 or 3)
First Steps

Load the Echorec on a track of your choice in your DAW. The base preset is a good starting point. You can now:

- Adjust the delay time with the "Disk Speed" knob or the "Tap" button (the "sync" button allows you to enable/disable synchronization to the BPM).

- Adjust the amount of delayed sound with the "Mix" knob.

- Increase the number of repetitions with the "Feedback" knob.

- Increase the "thickness" of the repetition sound with the "Drive" knob.

You can also review the available factory presets to find inspiration quickly, without getting into technical considerations.
The user interface consists of 2 separate panels:

- The toolbar, common to all Pulsar plug-ins (top)
- The control panel, specific to the plug-in

The Toolbar

Located at the top of the plug-in interface, it contains all the functions relating to parameters, presets, communication with Pulsar, etc.
**Undo / Redo**

The 2 buttons containing arrows on the left of the bar have the function Undo and Redo, i.e. respectively the cancellation and restoration of the last action. All parameter changes and more generally the status of the plug-in are stored in a history. You can click on "Undo" at any time to return to the previous state (or to the n-th previous state) and on "Redo" to return to the current state.

Note: a right-click on one of these buttons gives access to the list of stored operations

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**Preset Selection**

The preset selection area, located in the center of the bar, allows you to:

- Have the name of the current preset. If an asterisk appears after the preset name, it means that the state of the plug-in no longer corresponds to the saved preset
- Select a preset from the list of available presets, arranged in subbanks
- Delete the current preset ("Delete Preset" option)
- Rename or move a preset to another subbank ("Move / Rename Preset" option)
- Quickly navigate between the presets to find inspiration, using the left and right arrows

---

**Save / Save As**

The Save button saves the current preset. The Save As button saves the current state of the plug-in under a new preset name
**A / B**

This section allows you to compare 2 different states of the plug-in, or 2 different presets. Slots A and B, accessible through these 2 buttons, represent 2 completely independent states.

For example, when state A is active, you can load a preset and/or make settings from the interface, then click on button B; then load another preset and/or make other settings; buttons A and B now allow you to quickly switch between the two states and easily compare the 2 presets or sets of settings.

It is also possible to copy the state A to B or vice versa using the > or < buttons located between A and B.

![A > B](image)

*The A, B and Copy buttons*

**... Button**

The button located on the far right of the bar encompasses the communication functions with the company, Pulsar:

- access to the website
- access to social media
- access to communication with technical support
- link to this user manual

![... button](image)

*The ... button*
The Control Panel

The Echorec's control panel is largely inspired by that of the original machine, with some additions to expand the sound palette.

The Magic Eye

The magic eye is the green light located in the center of the interface. It is a vacuum tube of type EM81, intended, like a VU-meter, to give an indication of the sound level. The more the tube ignites, the more the delayed signal is saturated and heated by the tube circuits.

Bypass

The central switch under the Magic Eye is a bypass, it allows you to activate and deactivate the effect.
Mix

This knob is used to measure the amount of delayed signal and original signal. If the effect is placed on an auxiliary track, this setting should ideally be 100%; if it is directly inserted on an audio track, it should be adjusted to balance direct and faded sound.

Note: in the original Echorec, the undelayed signal passes through the machine’s tube circuits, and is therefore modified. We have chosen to keep this signal identical to the input signal. However, you can still enjoy a sound that is not delayed but processed by tube circuits, by using the Off mode in the Delays parameter.

Feedback

In RIP and SWELL modes, the Feedback knob controls the amount of output signal fed back into the circuit input, i.e. the number of repetitions. Above a certain threshold, the sound is maintained indefinitely in self-oscillation.

Note: In ECHO mode, this knob has no effect.
Delays

The Echorec consists of a writing head that writes on a magnetic disk, and 4 offset read heads that will read from the same disk. Each head is therefore responsible for a repetition, and can be activated / deactivated independently, using to the "Delays" rotary switch:

<table>
<thead>
<tr>
<th></th>
<th>Head #1</th>
<th>Head #2</th>
<th>Head #3</th>
<th>Head #4</th>
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<tr>
<td>Off</td>
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</tr>
</tbody>
</table>

To avoid referring to the table above, the active heads are briefly highlighted on the interface each time the Delays switch is moved.

It is thus possible to create rhythms using the combination of read heads.

Note: We have added an "Off" mode, absent on the original, which allows you to enjoy the color of the tube amplification circuits and the magnetic disc without any latency.
Drive

The Drive knob controls the gain with which the signal passes through the tube circuits. The higher it is, the thicker or even distorted the delayed signal will be.

Mode

The Echorec has 3 operating modes:

- ECHO: a standard slapback delay, only one repetition per writing head.
- RIP: a classic "feedback" delay, the sound of each playback head is fed back into the input according to the value of the Delays knob. This mode is the one that was most used by Pink Floyd in the early 1970s.
- SWELL: works like the RIP mode, where the output of each read head is fed back into the input according to the chosen Delays, except that the overall output is the sum of all 4 read heads independent from the Delays knob. Originally, this mode was used to recreate the sound space of a small room.

Note: In ECHO mode, the Feedback knob has no effect.

Volume

This parameter is used to adjust the output volume of the effect.
Disk Speed

Originally, the delay time of the Binson Echorec was fixed. We have added a "Disk Speed" parameter to vary the speed of the disc, and thus the delay time, to adapt it to all tempos and musical styles.

In Sync mode, the knob turns into a rotary switch, which allows you to choose between 5 different time divisions, relative to the delay time of read head #4.

Sync

The sync switch activates / deactivates the synchronization of the delay time with the tempo or BPM of the DAW.

Tap

The Tap button allows you to adjust the delay time by directly typing the tempo. The delay time will be equal to the interval between 2 clicks on the Tap.

Note: using the Tap button disables synchronization with the sequencer's BPM.
The Tap button

Tone

The Tone knob is used to adjust the tonal balance of the delayed sound.

The Tone knob

Condition

We took care to model the Echorec in 3 states of wear:

- MINT: Brand new condition, ex factory
- GOOD: Good condition, slightly used
- USED: After long use, the vacuum tubes are worn out and the magnetic heads are misadjusted.

All the characteristics of these 3 conditions have been modelled except the background noise, which has been deliberately reduced, especially in Mint mode, to make the plug-in usable in a maximum range of different conditions of use / working levels.

The Condition knob
**Stereo drift**

The Stereo Drift, available only on a stereo track, allows you to introduce a slight difference in delay time between the left and right channels, creating a "drift" to the right or left. Use this setting to widen a mono recording for example.

![The Stereo Drift knob](image)

Note: This parameter has no effect if the Echorec is inserted on a mono track.

**Disk braking**

On the Binson Echorec, it is possible to brake the disc by pressing lightly with your finger to modulate its speed. This action is also possible on the plugin by clicking on the disk.

You can:

- Give small impulses, by clicking on the disc. The closer you click to the edge, the greater the modulation will be.
- Hold the mouse down and move over the disc. Again, the closer the cursor is to the edge of the disc, the greater the modulation will be.
Minimum Configuration

This plug-in is compatible with all major sequencers on the market (Cubase, Nuendo, Pro Tools, Logic Pro, FL Studio, Ableton Live, Bitwig, Digital Performer, Studio One, Reaper, Adobe Audition...)

Available formats:

- VST 2.4 (32/64-bit)
- VST 3 (32/64-bit)
- AAX (32/64-bit)
- Audio Unit (64-bit).

## Windows

CPU: Intel Core i3 / i5 / i7 / Xeon / AMD Quad-Core

Memory: 4 GB RAM / 1 GB free disk space

Operating system: Windows 7 and higher

GPU: OpengGL 2.0 compatible GPU

Screen resolution: minimum 1024x768 / recommended 1280x1024 or 1600x1024

## Mac OS X

CPU: Intel Core i3 / i5 / i7 / Xeon

Memory: 4 GB RAM / 1 GB free disk space

Operating system: 10.10 - 10.13

GPU: OpengGL 2.0 compatible GPU

Screen resolution: Minimum: 1024x768 / recommended: 1280x1024 / 1600x1024
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Activation

Pulsar will not be held responsible for any failure to activate PACE's iLok protection system / license.

Evaluation

Pulsar offers a 30-day trial license, starting at the time of transfer of the license to an iLok key. After expiration, the plug-in can no longer be used, and in the event that no permanent license is acquired, it must be deleted.
Third Party Software

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