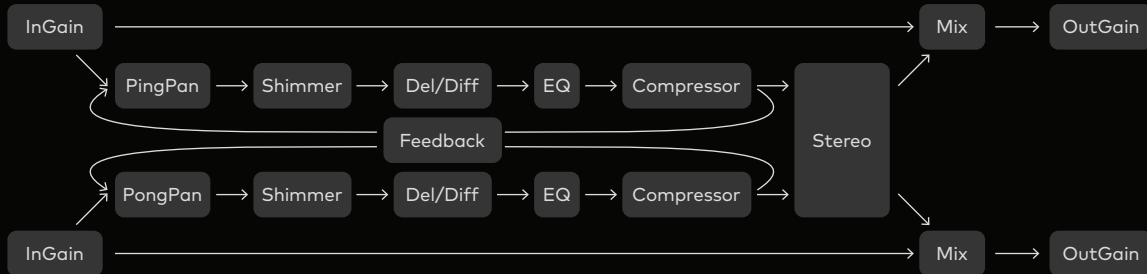# ECHOLOCATOR

PRECISION DELAY

erica synths × 112dB

# ECHOLOCATOR

Thank you for purchasing the Erica Synths Echolocator FX unit!

A unique stereo delay with an algorithm developed by 112dB, the Echolocator is a hands-on precision tool that lets you take manual and very musical control over small nuances. Like a bat navigating its environment in the dark, you can feel your way through your live performances and shape the delay response and character on the fly.

Featuring 12 parameters for detailed sound design, save/recall functions for all parameters, MIDI control over all parameters and a sleek aluminium case to match our lineup of compact desktop units, the Echolocator will let your setup take flight in any live show, studio or sonic experiment.

## ▶ A Signal Flow

InGain → Mix → OutGain

PingPan → Shimmer → Del/Diff → EQ → Compressor

Feedback

Stereo

PongPan → Shimmer → Del/Diff → EQ → Compressor

InGain → Mix → OutGain

Sets the delay time from 4ms to 4 seconds. When in SYNC mode the TIME knob becomes time multiplier (CCW) and divider (CW). The ratios are 1/8, 3/16, ¼, 1/3, ½, 1, 2, 3, 4, 16/3, 8.

Adjusts input gain of the Echolocator. It ranges from guitar to line levels.

Amount of jitter (higher speed modulation). ORBIT collerates to the MOD SPEED setting.

OLED indicates the presets and configuration.

Selects and saves the presets and performs configuration of the unit.

Controls the output volume of the Echolocator.

Freezes the audio buffer determined by the TIME potentiometer setting. Pushing and holding the BACK button and pushing the FREEZE button bypasses the FX.

Brings the menu one step back and acts as the SHIFT button for Bypass and Sync.
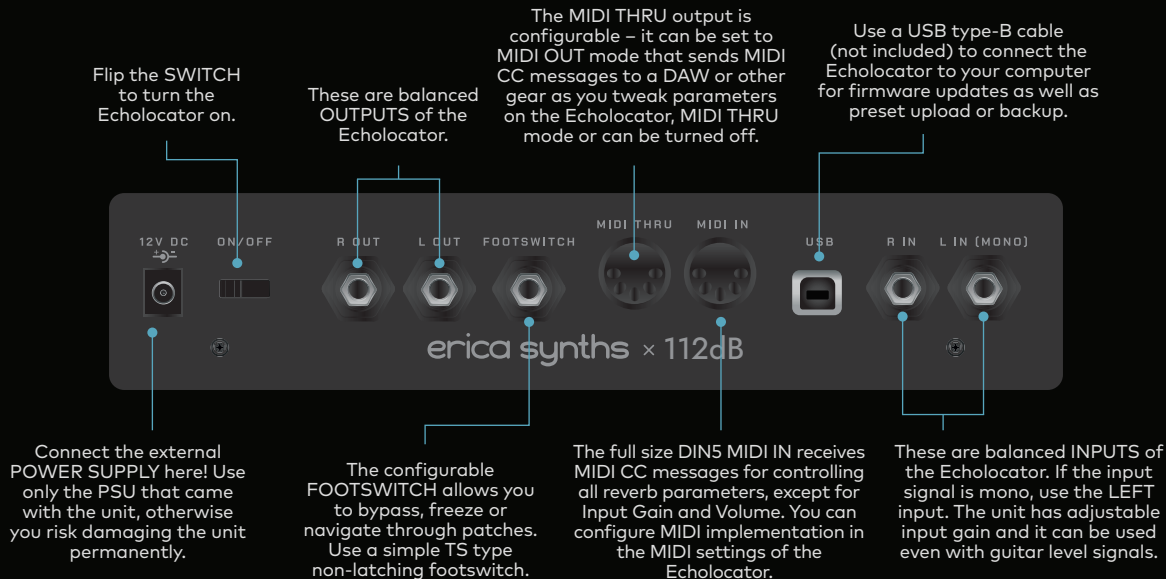
Tap the button to sync a delay time to the tempo. Pushing and holding the BACK button and pushing the TAP TEMPO button syncs the delay time to the MIDI clock.

Sets the quality of the filter. 0 is flat (no filtering) 100 is narrow band filtering.

Sets a center frequency of the filter.

Pans the input signal to get a ping pong effect.

Sets the LFO speed of the LFO from 0 to 2Hz

Sets the feedback amount (number of delay reflections)

Sets the LFO amount, sent to the TIME control.

Adds room reverb. between delay and reverb. Add some room to your audio signal!

Controls the mix between the input signal and the delayed signal.

Sets the shimmer pitch -12 to +12 semitones.

Sets amount of shimmer.

ECHOLOCATOR

GAIN
+6dB
0dB        +24dB

ORBIT
50
0        100

DATA

VOLUME
-12dB
-∞dB        0dB

BACK

FREEZE

TAP TEMPO

FILTER CUTOFF
50
15Hz        22.5kHz

FILTER Q
50
0        100

TIME

FEEDBACK
50
0        100

PING PONG
MIX
L        R

MOD SPEED
1Hz
0Hz        2Hz

MOD DEPTH
50
0        100

REVERB
50%
0%        100%

DRY/WET
50
-100        100

PITCH SHIFT
0
-12        +12

SHIMMER
50
0        100

# ▶ Connections

Flip the SWITCH to turn the Echolocator on.

These are balanced OUTPUTS of the Echolocator.

The MIDI THRU output is configurable – it can be set to MIDI OUT mode that sends MIDI CC messages to a DAW or other gear as you tweak parameters on the Echolocator, MIDI THRU mode or can be turned off.

Use a USB type-B cable (not included) to connect the Echolocator to your computer for firmware updates as well as preset upload or backup.

12V DC   ON/OFF   R OUT   L OUT   FOOTSWITCH   MIDI THRU   MIDI IN   USB   R IN   L IN (MONO)

erica synths × 112dB

Connect the external POWER SUPPLY here! Use only the PSU that came with the unit, otherwise you risk damaging the unit permanently.

The configurable FOOTSWITCH allows you to bypass, freeze or navigate through patches. Use a simple TS type non-latching footswitch.

The full size DIN5 MIDI IN receives MIDI CC messages for controlling all reverb parameters, except for Input Gain and Volume. You can configure MIDI implementation in the MIDI settings of the Echolocator.

These are balanced INPUTS of the Echolocator. If the input signal is mono, use the LEFT input. The unit has adjustable input gain and it can be used even with guitar level signals.

# ▶ A bit of menu diving

**Even though most of the controls of the Echolocator are hands-on, there are some features that are accessible through the OLED display via the DATA encoder.**

---

**01 INFINITEVOID**

As you turn the Echolocator on, the display indicates a list of presets. The Echolocator comes with 40 factory presets and you can save up to 60 user presets. Rotate the DATA encoder to navigate through the presets and click the encoder to activate a preset. The presets can be backed up to your computer and you can load presets from other other Echolocator users – refer to the SYSTEM settings below.

---

**PATCH**

Push the BACK button to access the main MENU. Use the DATA encoder to navigate through the menu and push it to confirm. The first section of the menu is for PATCH (preset) management.

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**SAVE AS** SAVE / RENAME
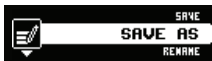
In order to SAVE a preset, select the SAVE AS option and push the encoder to confirm saving. The preset naming menu will appear.

---

**PATCH NAME** — CLEAR MAGIC SAVE

In order to NAME the patch, push and hold the DATA encoder until the symbol selection appears on the bottom of the display. Use the DATA encoder to select symbols and push it to dial in a name for the preset. Once happy, push and hold the DATA encoder –this will bring you back to the preset naming screen. Select SAVE and push the DATA encoder to confirm saving. Here you can also CLEAR the preset name and generate random preset names (MAGIC) – simply rotate the DATA encoder to navigate to the relevant section of the menu on the bottom of the display.

---

**PATCH**

Another feature in the PATCH management section is called MAGIC. Once you click the DATA encoder to confirm MAGIC, the Echolocator will generate a new preset – a random combination of all parameter settings. If you are happy with how it sounds, you can SAVE the preset.

---

**DELETE / SORT**

In the PATCH menu you can also SORT the presets. This is useful feature if you want to use a footswitch to navigate through the presets. Push the DATA encoder to activate the SORT function.

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**38.SICK STREETS**
**39.LOST TONE**
**40.SOFT DUB**
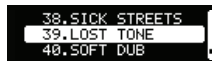
In order to SORT the presets, rotate the DATA encoder to select the preset you wish to move and push the encoder. The selected preset will become "sticky" and you can rotate the encoder to move it to another slot. Once happy, push the DATA encoder to confirm the new slot of the preset. In order to exit the PATCH menu, push the BACK button.

## EFFECT

In the EFFECT section you can configure the DSP behaviour of the Echolocator.

**DIRTY: OFF**
FILTER MODE: FBK

By default, the delay effect is based on emulation of tape delay, but you can select an alternative mode - emulation of a BBD delay. To do so, rotate the encoder to select the DIRTY option, push the encoder and select ON. Push the encoder again to confirm and now your Echolocator will be set to BBD mode. Note that this setting is saved with the presets.

DIRTY: OFF
**FILTER MODE: FBK**
COMPRESSOR: 50

The Echolocator has two options in the filter routing - in a feedback loop or in series with audio signal. Routing of the filter considerably changes how the filter impacts the sound. In order to change the filter routing, push the encoder and rotate it to make a selection. Push the encoder to confirm.

COMPRESSOR: 50
**SHIMMER: A**
ANLOG MIX: ON

The Echolocator features two types of SHIMMER A and B. The difference between types is in how a pitch shifted signal is mixed with the a non pitch shifted signal type A mixes in pitch shifted signal gradually so that at setting 100 you have 50/50 dry/wet mix, while type B at setting 50 starts to fade out dry signal, so that at setting 100 you have wet signal only. In order to switch between those, push the encoder and rotate it to make a selection. Push the encoder to confirm.

FILTER MODE: FBK
**COMPRESSOR: 50**
SHIMMER: A

To limit extreme feedback sounds, the delay algorithm features a compressor in FX chain. When designing your unique delay patches, you can adjust COMPRESSION amount form 0 to 100. To do so, push the DATA encoder and rotate it to set desired compression amount. Push the encoder to confirm the setting.

SHIMMER: A
**ANLOG MIX: ON**
MORPH: OFF

In order to save the DRY/WET knob position, the Echolocator uses analogue VCAs to fade between dry and wet (processed with the reverberator) signals. You can omit the analogue VCAs and use the digital DRY/WET mix instead. To do so, push the DATA encoder to select ANALOG MIX and then rotate it to select OFF. Push the encoder again to confirm this selection.

ANLOG MIX: ON
**MORPH: OFF**

Another distinct feature of the Echolocator is preset MORPHING. Instead of an instant preset change, you can set a fade-in time for the next preset. Push the DATA encoder to select the MORPH option and rotate the encoder to set the preset fade-in time in seconds. Available options are: 0.1", 0.2", 0.5", 1", 1.5", 2", 3", 4", 5", 7.5" and 10". In order to exit the EFFECT menu, push the BACK button.

## MIDI

In the MIDI menu you can configure the Echolocator MIDI implementation.

**MIDI CH:3**
MIDI OUT:OFF

The first submenu here is for setting the MIDI channel. Push the encoder to activate the MIDI channel selection and rotate it to select a channel. The selected channel will be the same for MIDI IN and MIDI OUT. If a MIDI keyboard is connected (or DAW that is configured to send MIDI notes) and the channel is selected, the TIME parameter of the Echolocator can be played in a 12-tone scale. This works best when FREEZE mode is enabled and the decay tail sustains infinitely.



MIDI CH:1
**MIDI OUT:THR**
SIZE CC: 70

Next, we have the MIDI output configuration. Push the DATA encoder to access the MIDI output configuration and rotate it to select one of the options. The MIDI output can be set to MIDI OUT mode that sends MIDI CC messages to your DAW or other gear as you tweak parameters on the Echolocator, MIDI THRU mode or can be turned off.



MIDI OUT:OFF
**TIME CC:70**
FILT-Q CC: 71

As you scroll down the MIDI menu, you can assign custom MIDI CC messages to all Echolocator parameters. See the default MIDI CC implementation on the page 10 of this manual. For example, by default the CC message for the TIME parameter is 70, but you can push the DATA encoder and rotate it to change it to a different CC. In order to exit the MIDI menu, push the BACK button.
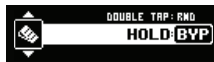


**FOOTSWITCH**

In the FOOTSWITCH section you can configure the footswitch behaviour of the Echolocator.



**SINGLE TAP:FRZ**
DOUBLE TAP:RND

For a SINGLE TAP you can select the following options: OFF – the footswitch will not react on the single tap, BYPASS, FREEZE, FWD – each tap of the footswitch advances to the next preset in the list, BWD - each tap of the footswitch advances to the previous preset in the list, RND – each tap of the footswitch initiates a random preset from the list, MGC (MAGIC) – each tap on the footswitch generates a random combination of parameter settings, and TAP - use the footswitch to tap in a delay time. In the TAP setting DOUBLE TAP and HOLD options are automatically disabled. Rotate the DATA encoder to select an option and push the encoder to confirm the selection.



SINGLE TAP:FRZ
**DOUBLE TAP:RND**
HOLD:BYP
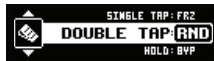
For DOUBLE TAP you have a selection of the same options as for single tap.



DOUBLE TAP:RND
**HOLD:BYP**

For a footswitch HOLD (2") you can select the following options: OFF – the footswitch will not react on hold, BYPASS and FREEZE. Rotate the DATA encoder to select an option and push the encoder to confirm the selection. In order to exit the FOOTSWITCH menu, push the BACK button.
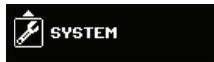


**SYSTEM**

In the SYSTEM menu you will find general configuration settings of the Echolocator as well as options for backing up the patches.

**BRIGHTNESS:80**
LED BRIGHT:7

The first setting here is for OLED DISPLAY BRIGHTNESS. Push the DATA encoder to select the brightness setting, rotate it to set the desired brightness level and push the encoder to confirm. The second selection allows you to adjust LED brightness. Push the DATA encoder to select the brightness setting, rotate it to set desired brightness level and push the encoder to confirm.

LED BRIGHT:7
**OLED SAVER:10S**
POT CATCH:OFF
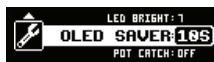
Next, we have the OLED DISPLAY SCREENSAVER. Push the DATA encoder to select the OLED SAVER setting, rotate it to set the desired screensaver time and push the encoder to confirm.

OLED SAVER:10S
**POT CATCH:POP**
LOAD LAST:ON

PARAMETER
**TIME**
39

The POT CATCH option turns the potentiometer position memory ON or OFF when you change the presets. Each preset has specific potentiometer positions and when you change the preset, in most cases these positions will be different. With POT CATCH set to ON, you need to rotate the relevant potentiometer through the previously saved position before it starts altering the parameter, thus ensuring gradual transitions in sound when altering parameters. With POT CATCH set to OFF, rotating the relevant potentiometer will immediately change the position and have an effect on the sound. There is a third setting – POP, which turns pot catch ON and displays a handy pop-up when adjusting a parameter to see where the locked position is that has to be matched in order to alter the parameter.

POT CATCH:OFF
**LOAD LAST:ON**
USB MANAGE

If LOAD LAST is set to ON, when power cycling the Echolocator, it will load the last preset that was active before powering the unit off. If this is set to OFF, the Echolocator will initiate the first preset in the list.

LOAD LAST:ON
**USB MANAGE**
USB BACKUP

In USB MANAGE mode you can add/remove individual patch presets. Connect the Echolocator to your computer via a USB cable and push the DATA encoder to begin. The Echolocator will appear as an external drive on your computer – open it and you will see a directory with the preset .nvp files – you can add new ones or remove/back up individual patches to your computer. Push the BACK button on the Echolocator to eject it from your computer.

USB MANAGE
**USB BACKUP**
FACTORY RESET

In USB BACKUP mode, you can back up all current patches of the Echolocator (only patches and their order, not settings). Connect the Echolocator to your computer via a USB cable and push the DATA encoder to begin. The Echolocator will appear as an external drive on your computer – open it and you will see a directory with a single backup.nvb file – you can save a copy of this on your computer or replace it with another backup.nvb file to load a different backup. NB! When loading a different backup, it will completely overwrite the existing patches and their order.

USB BACKUP
**FACTORY RESET**
VERSION: 0.03

You can perform a FACTORY RESET of the Echolocator. Push the DATA encoder and follow instructions on the OLED screen.

FACTORY RESET
**VERSION:0.03**

The last section on the SYSTEM menu shows the firmware version. You can subscribe to the Erica Synths mailing list, social media or check www.ericasynths.lv for firmware update announcements!

# ▶ Firmware upgrade



In order to upgrade the firmware of the Echolocator, power it off and connect it to your computer via a USB cable. Then, power it on while pushing and holding both the DATA ENCODER and the TAP TEMPO button – a firmware upgrade display will appear. The Echolocator will appear as an external drive on your computer – open it and you will find an empty directory with an INFO.txt file in it. Simply drag and drop the .uf2 firmware file into the directory – It will immediately upload and the display will quickly show FINISHED! – the Echolocator will then restart itself into normal operation mode and it will no longer be visible as a drive on your computer (you can then remove the USB cable) – the firmware has been successfully installed!

# ▶ New Features

**1.02 UPDATE**
Changelog:
- Added Dub mode
- New Synchronized delay time ratios & popup

You can engage the new DUB DELAY mode in the EFFECT section. The DUB mode is saved with the preset.



Navigate to the EFFECT settings and rotate the encoder to select the DUB mode. Once DUB is set to ON, the DRY/WET knob acts as an FX SEND instead, letting you send the dry signal into the wet mix manually, allowing for aux-send type effects without an external mixer. Turn the DRY/WET knob promptly for dub-style punch-in echo sends.



Set the DUB MIX – this becomes the DRY/WET setting once DUB mode is enabled.

# ▶ Default MIDI CC implementation

| PARAMETER | MIDI CC | RANGE |
|---|---|---|
| Time | 70 | 0-127 |
| Filter Q | 71 | 0-127 |
| Filter cutoff | 72 | 0-127 |
| Modulation speed | 73 | 0-127 |
| Modulation depth | 74 | 0-127 |
| Reverb mix | 75 | 0-127 |
| Orbit | 76 | 0-127 |
| Dry/wet mix | 77 | 0-127 |
| Feedback | 78 | 0-127 |
| Pitch shift | 79 | 0-127 |
| Shimmer | 80 | 0-127 |
| Ping pong | 81 | 0-127 |
| Freeze | 82 | ON/OFF |

# ▶ Factory presets by Eraldo Bernocchi

**01 GREAT EYE -** simple stereo delay

**02 PAD NOW -** pad helper

**03 HAPPY SNAP -** tape delay sweeping toward high frequencies

**04 ARP ME SLOW -** slow arpeggio doubler

**05 ORBITS -** octave down shimmer. Try it with drones

**06 TAPISH -** tape delay

**07 SLIGHT DETUNE -** great with pads and single note

**08 SOFT PAIN -** shimmered swirl reverb

**09 CORMAN -** use it for guitars, drones or pads. Play with feedback and filter

**10 RUMBLER -** Trumble tape creator

**11 DOUBLER -** for guitars, pads, vocals

**12 KRAFTY -** arpeggios and grooves. Use filter

**13 SPLASH -** snare or percussion short delay/verb

**14 SLEE PITCH -** Deep shimmered endless space

**15 SHIMMER MAD -** high shimmer sweep that never ends

**16 BUBBLER -** downward shimmer

**17 THE GIANT -** enormous reverb going sub

**18 MTL BARRELL -** metallic delay

**19 SUPERMARIO -** 80's video game shimmer

**20 SLAPPER -** slapback delay

**21 GLITCHNOISE -** long and slow glitcher

**22 DOWN RIPPLES -** octave down ripples. Good for arpeggios

**23 WRONG CORE -** metallic delay/verb

**24 SWIRLER -** swirling octave up shimmer

**25 FREEZE ME -** delay cutting of high frequencies. Freeze it

**26 SMEAR -** slow delay verb for vocals and guitars

**27 RISER -** slow reverb-oriented shimmer. Guitars and drones oriented

**28 AMBIENTISER -** the name says it all

**29 CRITTERS -** small creatures living in your studio

**30 CHUCK -** try on snares

**31 LANDING -** exactly landing

**32 CASCADE -** shimmer cascading

**33 FORM FUNCTION -** distorted pitching delay

**34 USED WHIP -** ping pong tape delay

**35 DEPTHS -** waterish modulating delay

**26 ETERNAL DOSE -** super long droner. Try it with vocals or pedal guitars

**37 WOOFER TUB -** sub creator

**38 TOP DOUBT -** dirty ping pong

**39 EASY PAIN -** shimmered up ping pong

**40 BAD TRANSIT -** springy delay

**41 OCT DOWN -** shimmer going down. Drones and pads...and vocals too

**42 CAB DETUNER -** radioish detuned delay

**43 PAD MOGUL -** use it for pad and vocals but careful as the feedback control is really sensible

**44 SNARE SPRING -** as per the name

**45 TECH SUPPORT -** straight kick roller. Careful as the subs can be big

**46 USE FILTERS -** self oscillating droner. As soon as you feed it it stops oscillating. Pauses are noisy

**47 KICK SUPPORT -** sub kick support

**48 DIRTY SPACE -** dirty and reduced delay

**49 ARP SINGER -** subtle singing shimmer, for arpeggio

**50 WICKED FLY -** the more you feed it the more it's tamed...let it go and it'll be overwhelming

# ▶ Safety instructions

Please follow the instructions for the use of the Erica Synths X 112.dB Echolocator module below, because only this will guarantee the proper operation of the module and ensure the warranty from Erica Synths.

⚡ Use the Echolocator module exclusively with the power supply unit (PSU) supplied with the system. Powering it with other PSU units may cause permanent damage to the device.

☔ Water is lethal for most electric devices unless they have been rendered waterproof. The Echolocator module is NOT intended for use in a humid or wet environment. No liquids or other conducting substances should be allowed into the module. Should this happen, the module should be disconnected from mains power immediately, dried, examined and cleaned by a qualified technician.

🔥 Do not expose the instrument to temperatures above +50° C or below -20° C. If you have transported the instrument in extremely low temperatures, leave it at room temperature for an hour before plugging it in.

📦 Transport the instrument carefully. Never let it drop or fall over. The Warranty does not apply to instruments with visual damage.

📦 Echolocator module must be shipped in the original packaging only. Any instrument shipped to us for return, exchange and/or warranty repair must be in its original packaging. All other deliveries will be rejected and returned to you. Ensure that you keep the original packaging and technical documentation.

# ▶ Disposal

This device complies with EU guidelines and is manufactured and confront RoHS without the use of lead, mercury, cadmium or chrome. Nevertheless, this device is special waste and disposal in household waste is not recommended.

User manual by Girts Ozolins@Erica Synths.
Design by Ineta Briede@Black8 & Maija Vitola@Black8.

Copying, distribution or any commercial use in any way is prohibited and needs the written permission of Erica Synths.

The specifications are subject to change without notice.
If you have any questions, feel free to contact us
via SUPPORT section on www.ericasynths.lv

You will find the Erica Synths terms of warranty at
**www.ericasynths.lv**

Items for return, exchange and/or warranty repair should be sent us
according to the guidelines on SUPPORT section on **www.ericasynths.lv**

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