RAZORNATOR

Five band stereo resonator

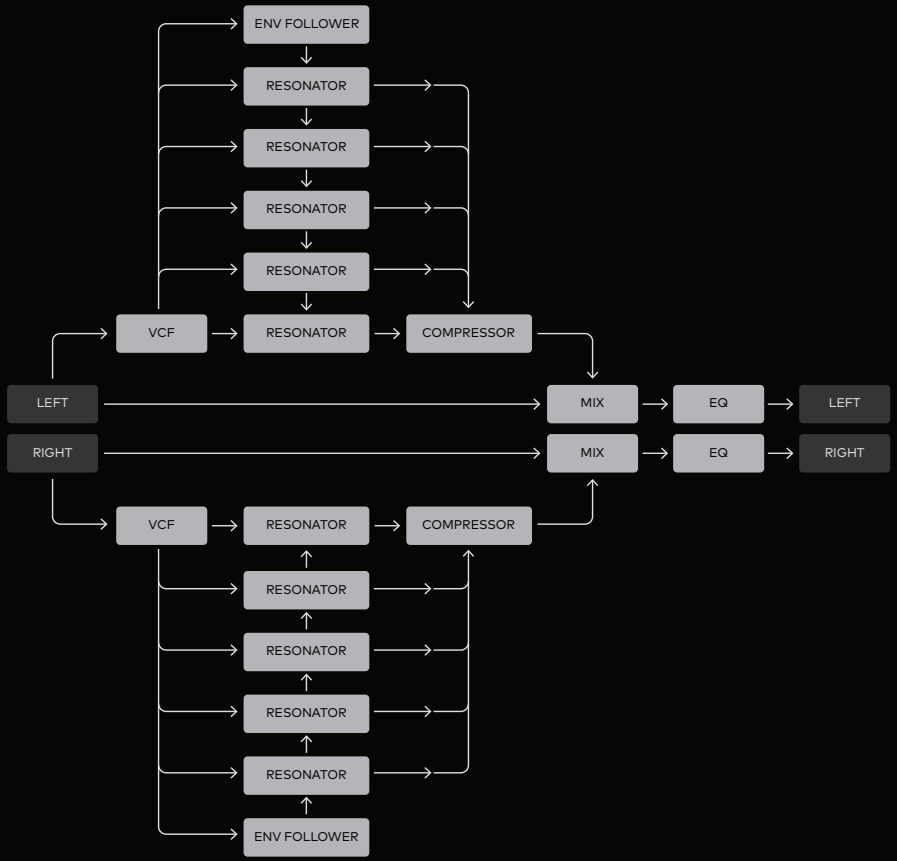
erica synths × 112dB

RAZORNATOR

Thank you for purchasing the Erica Synths Razornator!

A unique stereo FX unit with an algorithm developed by Dutch company 112dB, the Razornator features 5 chromatically tuned resonating delay lines that can emulate the resonance of physical objects – bodies of instruments, rooms, structures. Chromatic tuning of the resonating delay lines makes the effect particularly musical, because it allows for aligning them in chord-like intervals, while the built-in envelope follower adds dynamics to the processed signal. 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 Razornator will let your setup take flight in any live show, studio or sonic experiment.

The Razornator combines several well considered and tuned "modules" for stereo audio processing with the aim of altering the harmonic content of the incoming signal. The signal path starts with an audio GAIN STAGE that boosts signals up to +24dB (it can effectively act as an analogue overdrive), then the signal is fed through the lowpass FILTER with a RESONANCE control and after filter treatment it passes through five chromatically tuned DELAY-BASED RESONATORS that can be manually tuned or controlled by the ENVELOPE FOLLOWER. After the resonators, the signal is summed and limited by the COMPRESSOR, then mixed with the dry signal and passed through the EQUALIZER and finally is sent to BALANCED OUTPUT stage.



Adjust the input gain of the Razornator. It ranges from guitar to line levels.

Set the envelope follower amount applied to the EQ amount (DAMP parameter). This control is an attenuverter with no effect in the 12 o'clock position. Rotating the knob clockwise applies a positive envelope, rotating it counterclockwise – an inverted one.

Set the root note of the resonators. The root note selection is indicated in real-time on the display.

The OLED display indicates resonator tune settings, presets and provides access to the configuration settings.

Use the encoder to select and save the presets and to perform configuration of the unit.

Push the button to bypass the effect. In bypass mode, the GAIN and VOLUME settings still have an effect, only the FX patch is bypassed.

Brings the menu one step back.

Adjust the output volume of the Razornator.

Adjust the resonance of the filter from zero to self-oscillaton.

The negative polarity button changes the feedback polarity of all resonators – when it is on, only odd harmonics occur in the feedback.

This is the cutoff frequency control of the lowpass filter before the signal enters the array of resonators.

This is a damping EQ control for low frequencies.

Adjust the envelope follower decay time from an almost instant response to super-long decays for drones made of self-resonating delay lines.

Set the pitch of the first resonator. The setting is indicated in real-time on the display.

Set the pitch of the second resonator. The setting is indicated in real-time on the display.

Shift the pitch of all resonators simultaneously by +-2 octaves. The setting is indicated in real-time on the display. The SHIFT control only affects the right stereo channel in order to add harmonic enhancement to the stereo field.

Adjust the mix between the input signal and the shaped/overdriven signal

Set the pitch of the third resonator. The setting is indicated in real time on the display.

Set the pitch of the fourth resonator. The setting is indicated in real-time on the display.

Connections

Flip the SWITCH to turn the Razornator on.

These are balanced OUTPUTS of the Razornator.

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 Razornator, MIDI THRU mode or can be turned off.

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

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 parameters of the unit, except for Input Gain and Volume. Connect a MIDI keyboard and play notes to add chord-like overtones to the incoming audio.

These are balanced INPUTS of the Razornator. 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 Razornator are hands-on, there are some features that are accessible through the OLED display via the DATA encoder.

As you turn the Razornator on, the display indicates a list of presets. The Razornator 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 Razornator users – refer to the SYSTEM settings below.

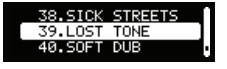
Push the BACK button to access the main MENU. Use the DATA encoder to navigate through the menu and push it to confirm. The first section of the menu is for PATCH (preset) management.

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

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.

Another feature in the PATCH management section is called MAGIC. Once you click the DATA encoder to confirm MAGIC, the Razornator 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.

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



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.

In the EFFECT section you can configure the DSP behaviour of the Razornator. All settings in the EFFECT menu are per-preset, meaning that they are saved with the presets.

Delay-based resonators on the Razornator can be QUANTIZED to semitones or microtonally, in a resolution of roughly 1 cent. In order to switch between quantized and microtonal modes, push the DATA encoder and rotate it to select QUANTIZE: ON or OFF. Push the DATA encoder to confirm selection.

Next setting allows you to adjust the Envelope Follower ATTACK time. The scale is relative from 1 to 100, which represents attack time form 1ms to 100ms. Push the DATA encoder and rotate it to set the attack time. Push the encoder to confirm.

Adjust the Envelope Follower RELEASE time. The scale is relative from 1 to 100, which represents the release time from 10ms to 1s. Push the DATA encoder and rotate it to set the attack time. Push the encoder to confirm.

In order to save the DRY/WET knob position, the Razornator uses analogue VCAs to fade between dry and wet 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.

Another distinct feature of the Razornator 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.

In the MIDI menu you can configure the Razornator's MIDI implementation.

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.

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 Razornator, MIDI THRU mode or can be turned off.

As you scroll down the MIDI menu, you can assign custom MIDI CC messages to all Razornator parameters. See the default MIDI CC implementation on the page 10 of this manual. For example, by default the CC message for the ROOT NOTE CC 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.

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

For a SINGLE TAP you can select the following options: OFF – the footswitch will not react on the single tap, BYPASS, 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. Rotate the DATA encoder to select an option and push the encoder to confirm the selection.

For DOUBLE TAP you have a selection of the same options as for single tap.

For a footswitch HOLD (2") you can select the following options: OFF – the footswitch will not react on hold, BYPASS and FORWARD. 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.

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

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 the desired brightness level and push the encoder to confirm.

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.

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.

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

The SHOW PITCH setting allows you to turn the visualization of the keybed with resonator pitch settings ON or OFF on the display. Push the encoder to enter the SHOW PITCH setting, rotate it to make your selection and push the encoder to confirm.

In USB MANAGE mode you can add/remove individual patch presets. Connect the Razornator to your computer via a USB cable and push the DATA encoder to begin. The Razornator 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 Razornator to eject it from your computer.

In USB BACKUP mode, you can back up all current patches of the Razornator (only patches and their order, not settings). Connect the Razornator to your computer via a USB cable and push the DATA encoder to begin. The Razornator 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.

You can perform a FACTORY RESET of the Razornator. Push the DATA encoder and follow the instructions on the display.

You can also turn ON and adjust the OLED DIMMING time - after the selected preset time, the OLED brightness will dim, thus increasing lifespan of the OLED display.

The last section of 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 Razornator, 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 NEGATIVE POLARITY button – a firmware upgrade display will appear. The Razornator 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 Razornator 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!

Default MIDI CC implementation

PARAMETER	MIDI CC	RANGE
Root	70	0-127
Pitch 1	71	0-127
Pitch 2	72	0-127
Pitch 3	73	0-127
Pitch 4	74	0-127
Shift	75	0-127
Damp	76	0-127
Damp EF	77	0-127
Decay	78	0-127
Cutoff	79	0-127
Resonance	80	0-127
Dry/Wet	81	0-127
Neg Pol	82	ON/OFF

Factory presets by Eraldo Bernocchi

Proper GAIN is essential for correct operation and input level is critical for driving the ENVELOPE FOLLOWER (EF). Adjust GAIN carefully. EF ATTACK and EF RELEASE strongly affect response behavior. Whenever possible use modulation sources to modulate CUTOFF, RESONANCE and DAMP. Most presets are tuned to C. These presets are starting points for your own sound design - experiment and trust your ears. Make them sing.

1. **SINGING KICK** – Feed a kick drum into the processor and adjust DECAY and CUTOFF to shape resonance and sustain.
2. **RISING CHORD** – Designed for higher frequencies. Works well with hi-hats or claps, creating an airy harmonic haze.
3. **HH ROBOTIZE** – Use on a full drum mix to generate robotic high-frequency textures. Adjust CUTOFF and SHIFT to taste.
4. **MANTRA 01** – Feed a single source—preferably a simple waveform or voice—and let it evolve into an instant mantra-like resonance.
5. **EF GALORE** – Groove-oriented preset. Move the EF control manually, or modulate via MIDI CC and LFO. Experiment with RESONANCE.
6. **HH ENHANCER** – Feed a beat into the processor and shape the result using RESONANCE and DAMP.
7. **SUB TECH** – Designed for techno grooves. Adjust RESONANCE, CUTOFF, and EF to generate a ducking sub-bass layer. Tuned to lower octaves.
8. **SORT OF GAMELAN** – Creates gamelan-like harmonic resonance. Feed melodies or arpeggios and adjust DECAY and CUTOFF.
9. **SITAROID** – Guitar-oriented but works with many sources. Ideal for melodies. Tuned to sitar-like intervals. Adjust CUTOFF and DECAY.
10. **SYMPATHETIC** – Simulates sympathetic resonance found in Indian string instruments. Shape with CUTOFF, RESONANCE, and DECAY.
11. **RES VERB** – Resonant reverb producing organic, glitch-like textures. Adjust CUTOFF.
12. **INFINITE REV** – Near-infinite reverb sustain. Use carefully. Control with RESONANCE and DECAY.
13. **SINGERS 1** – Any input begins to "sing." Adjust CUTOFF, DECAY, and EF.
14. **SINGERS 2** – Variant of SINGERS 1 with different interval structure. Adjust CUTOFF, DECAY, and EF.
15. **THERE** – Tuned to Gyuto monk-inspired intervals. Excellent for vocals and melodies. Adjust MIX.
16. **ELEVATE** – Near-infinite resonance designed for vocals and slow melodic material.
17. **SHIMM** – Shimmer-style effect. Ideal for electric piano and harmonic sources.
18. **MID RES** – Shapes mid and high frequencies in grooves and basslines. Adjust CUTOFF, DAMP, EF, and EF TIME.
19. **OCTAVION** – Five detuned octaves. Works on nearly any source. Adjust CUTOFF, DAMP, and especially EF TIME.

20 **MEGA BASS** – Feed a bass signal and adjust CUTOFF and RESONANCE. Warning: extreme low-frequency output possible.
21 **HH DOUBLER** – Doubles and thickens hi-hats. Adjust CUTOFF and DECAY.
22 **KICK DOUBLER** – Adds subharmonic layering to kicks. Increase RESONANCE for harmonic presence.
23 **CHORDIZER** – Transforms grooves, dub sequences, and rhythms into harmonic textures. Adjust CUTOFF, RESONANCE, and DECAY.
24 **INST MELO** – Creates melodic movement from cyclic input. Adjust CUTOFF and RESONANCE.
25 **GREEN SPACE** – Enhances grooves with suspended mid-side harmonics. Adjust CUTOFF, EF, EF TIME, and ATTACK.
26 **OPENER** – Melody-focused preset. Shape with DECAY and CUTOFF.
27 **LOW PAD** – Adds deep droning pad layers under melodic content. Adjust CUTOFF and DECAY.
28 **VOX HAZE** – Creates high harmonic clouds over vocals. Adjust DECAY.
29 **ARP CHOIR** – Adds choir-like harmonics to arpeggios. Adjust DECAY and CUTOFF.
30 **ADD DLY** – Adds harmonic layers to delayed material. Adjust DECAY and CUTOFF. Best used with external delay and recorded modulation.
31 **CLUSTERIZER** – Generates dense harmonic clusters. Adjust CUTOFF and DECAY.
32 **DUB TECH (HIGH)** – Applies to grooves and mid/high frequencies. Adjust CUTOFF and RESONANCE.
33 **DUB TECH (LOW)** – Optimised for low-end and kick frequencies. Adjust CUTOFF and RESONANCE. Small CUTOFF changes create evolving harmonics.
34 **AMBIENT HAZE** – Designed for slow melodic material. Creates floating mid-low harmonic haze. Adjust CUTOFF.
35 **VUH** – Self-generating mantra-like drone.
36 **RESONANTUS** – Large resonant room simulation.
37 **GIGANTIC** – Huge resonant reverb space. Shape with EF, CUTOFF, and DAMP.
38 **CAN** – A can. Maybe.

COMPLETE YOUR PERFORMANCE FX SETUP!

ECHOLOCATOR

Like a bat navigating its environment in the dark, with the Echolocator you can feel your way through your live performances and shape the delay response and character on the fly.

NIGHTVERB

The Nightverb focuses on the musical aspect of the reverberation effect – extremely long decay tails are possible without losing harmonic integrity of the signal, that can be pitch-shifted at a whim or used to create massive, ambient textures.

XENODRIVE

The Xenodrive - a unique stereo distortion/overdrive/waveshaper FX unit - is a hands-on tool for shaping your sounds in the studio or during live shows – from nuanced harmonic enhancement to total sonic destruction.

Safety instructions

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

Use the Razornator exclusively with the power supply unit (PSU) supplied with it. 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 Razornator is NOT intended for use in a humid or wet environment. No liquids or other conducting substances should reach the internals. Should this happen, the unit 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.

The Razornator 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 conforms to RoHS without the use of lead, mercury, cadmium or chrome. Nevertheless, this device is special waste and disposal in household waste is not recommended.

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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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