THANK YOU FOR CHOOSING ERICA SYNTHS BLACK SERIES MODULE!
Erica Black Series include high-end, unique functionality and superior quality modules. Only the best, highest quality components are used, all inputs and outputs are protected against undesired overvoltage. When designing Black Series, we put design and usability superior. Big knobs are assigned to key functions of the module, which makes Black Series ideal for live performances. Enjoy!

Erica Synths **Black CV Tools** is full analogue CV and audio processor module designed for advanced manipulations with signals – mixing, scaling, offsetting, waveshaping, etc.

The module has several configurations achievable via jumpers on the back of the module.

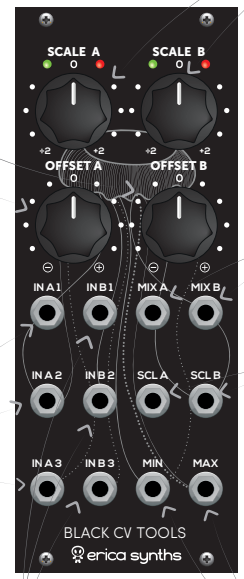
FEATURES:
2x3 channel audio and CV mixer with unity gain
2x attenuverters/boosters and bipolar offset
Min and Max function extractor
+5V reference
LED bioplar level indicators
Configurable features – see the description below

TECHNICAL SPECIFICATIONS:

Mixer gain	1 (unity)
Booster gain (Scale)''	adjustable up to 2
Offset	+-10V
Power consumption	+42mA, -38mA
Module width	10HP
Module depth	35mm

These are offset control knobs. At 12 o'clock the signal on SCL outputs has 0 offset (for example, if regular -5V - +5V sinewave LFO is applied to the any of mixer inputs, the signal on the relevant SCL output will be the sinewave oscillating around 0V), turning the knob CW up to 10V positive offset is added to the incoming signal (you can basically transpose incoming CV, for example or offset the middle point of the sinewave above 0V), turning the knob CCW will result in the negative offset

These are inputs of the first mixer (A). If nothing is patched in IN A1, the +5V reference voltage will appear on MIXA output. You can also use this as a CVs scaler to turn any bipolar Cvs patched in IN A2 into unipolar 1V/oct inputs on VCOs or opening VCAs!



These are inputs of the second mixer (B)

Scale A and Scale B knobs adjust attenuation/boosting/ inverting levels for each mixer output.
At 12 o'clock there will be no signal on SCL output. Turning the knob clockwise, the signal level will increase until it's boosted to gain 2. Turning the knob counter clockwise, the signal is inverted and gradually boosted to the gain 2

These are A and B mixer outputs, the mixer works with preset gain of 1

Scaled outputs take the relevant mixer output signal and pass it through Scaler circuit (it's basically attenuverter with gain 2 – it can boost and invert the incoming signal. Boosting large amplitude audio signals will result in over-drive effect) and Offset circuit that offsets audio and CV signals in positive or negative directions

These outputs derive Maximum and Minimum curves of MixA and MixB signals. If several CVs are applied to the inputs, Max and Min curves will be seemingly random CVs that reflect interaction between MixA and MixB; if audio signals are applied, the result on Min and Max outputs is extreme waveshaping

JUMPER CONFIGURATION

NORM A1 jumper. **default:** not set. This jumper provides an option for CV MIXER A to be capable of optionally offsetting the output up by +5V or down by -5V. This is very useful in cases where 0..+10 CV range needs to be moved to -5..+5V range and vice versa. Just set this NORM A1 jumper to "+5V" or "-5V" side and then when nothing is plugged in IN A 1 socket, mixer's output will be offset by +5V or -5V respectively, and this way provides precision offset to any CVs connected to IN A 2 and/or IN A 3 inputs. And whenever you will need to mix CVs without offset, just use the IN A 1 socket, and this offset will not be applied.

MATH IN A and **MATH IN B** jumpers. **default:** set to "mix". These jumpers allow to select wether MIN and MAX functions are operated from MIX or SCALED signals. There are individual jumpers for A and B input terms so that you can choose to have only one to be scaled, and one to be direct from a respective mix. This is useful, for example, if you want to use the MIN or MAX as a limit function with manually adjusted threshold using the OFFSET knob. As an another example, you can use MIN and MAX functions for some wild transformations when both input terms are set to SCALED.

MIN OUT SELECT and **MAX OUT SELECT** jumpers. **default:** set to "min" and "max". Whenever you might need more MIX outputs to be used as a splitter, or want a simultaneous inverse output of a respective MIX output, just set these jumpers and MIN and MAX outputs will become additional mix or inverse mix outputs. By moving these jumpers you can replace MAX output with MIX A or INVERSE MIX A; and MIN output with MIX B and INVERSE MIX B.

SAFETY INSTRUCTIONS

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

Water is lethal for most of the electric devices, unless they are made waterproof. Erica Synths module is NOT intended for use in a humid or wet environment. No liquids or other conducting substances must get 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 module to temperatures above +50°C or below -20°C.

Transport the instrument with modules installed carefully, never let it drop or fall over. Warranty does not apply to modules with visual damages.

The module has to be shipped in the original packaging only. Any module shipped to us for return, exchange and/or warranty repair has to be in its original packaging. All other deliveries will be rejected and returned to you. Make sure you keep the original packaging and technical documentation.

You will find Erica Synths terms of warranty at http://ericasynths.lv/en/terms/

Items for return, exchange and/or warranty repair have to be sent to: Erica Synths, Andrejostas Str. 43, Riga, Latvia, LV-1045

DISPOSAL

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

Designed and made in Latvia.
User manual by Girts Ozolins@Erica Synths.
Design by Edmunds Pavlovskis.

In case of any questions feel free to contact us via e-mail: **info@ericasynths.lv**

Check out other Erica Synths modules & devices at **www.ericasynths.lv**