Noise Engineering (https://www.noiseengineering.us/)

Terci Ruina

Three classic distortions with a Noise Engineering flair in four HP

- Overview
- Etymology
- Power
- Patch tutorial
- Design notes
- Warranty
- Special thanks

Overview

Three classic distortion topologies reinterpreted with a Noise Engineering touch and connected in series for complete sonic annihilation of any sound. Patch in and out at any point. Unapologetic noise and destruction.

- **Type**: Triple distortion
- **Size**: 4HP Eurorack
- **Depth**: 0.8 inches

- **Power**: 2x5 Eurorack
- **+12 V**: `30 mA`
- **-12 V**: `25 mA`

Etymology

Terci-- from Latin: *"Three"*

Ruina -- from Latin: *"Destruction"*

"Triple Destruction"

Power

To power your Noise Engineering module, turn off your case. Plug one end of your ribbon cable into your power board so that the red stripe on the ribbon cable is aligned to the side that says `-12 V` and each pin on the power header is plugged into the connector on the ribbon. Make sure no pins are overhanging the connector! If they are, unplug it and realign.
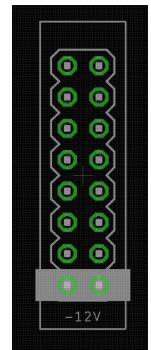
Line up the red stripe on the ribbon cable so that it matches the white stripe and/or `-12 V` indication on the board and plug in the connector.

Screw your module into your case **before** powering on the module. You risk bumping the module's PCB against something metallic and damaging it if it's not properly secured when powered on.

You should be good to go if you followed these instructions. Now go make some noise!

A final note. Some modules have other headers -- they may have a different number of pins or may say "not power". In general, unless a manual tells you otherwise, **do not connect those to power**.

Interface

FB

Distortion 1 drive amount. This circuit is uses two bipolar transistors for gain and silicon diodes in feedback for clipping.

FF

Distortion 2 drive amount. This circuit is uses an op amp for drive with silicon diodes in feedforward for extreme saturation.

FZ

Distortion 3 drive amount. This is a two stage bipolar transistor fuzz.

In x3

The inputs for the three distortions. Can be used separately, but are normaled to the previous distortion's output as shown on the panel. Patching breaks normalization.

Out x3

The outputs for the three distortions. Can be used separately, but are normaled to the next distortion's next as shown on the panel. Patching breaks normalization.
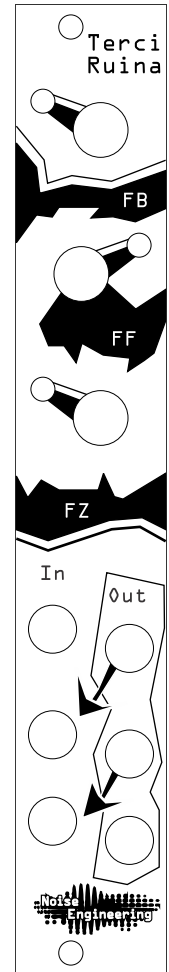
Patch tutorial

Patch 1

Patch a sound to the first input. Patch the last output to your mixer. Play with the knobs for some intense distortion.

Try using the ins and outs to change the order of the distortions and see the differences in sonic character.

Patch 2

Sinc Bucina works especially well before Terci Ruina. Try Sinc Bucina on its more resonant settings and then dial in some distortion from Terci Ruina. A second Sinc Bucina after that combo adds even more dynamic possibilities.

If a patch becomes to noisy, an easy solution is to put a VCA such as the Sinc Bucina or *Sinclastic Empulatrix* after Terci Ruina controlled by your main envelope.

Patch 3

Drums (both acoustic and electric; try the BIA!) sound especially good through Terci Ruina. Don't forget to try out the individual distortion circuits as well as combinations of all three!

Patch 4

Running a filter (especially a lowpass or bandpass filter) before or after TR always sounds great. Add an envelope (*Pons Asinorum* is a small, inexpensive option) to the filter for acidic basslines and modulated fun.

Design notes

We have been pondering and prototyping distortions for a long time. This module came from a prototype that was built just to investigate 6 different distortion topologies. We were looking for a simple candidate for our first Ruina module and decided that keeping it super simple was the best choice. Three distortions were chosen from the 6 trying to find the distortions that did the most interesting things when combined together.

The first section, FB , is a two-stage asymmetric diode-feedback topology using high-beta bipolar transistors for gain. It ends up being a very nonlinear waveshaper that is sensitive to waveform symmetry. I find a lot of really interesting tones in the middle knob range on this one as the gain ends up controlling where in the waveform the nonlinearities occur.

`FF` is an asymmetric feed-forward diode clipper using op-amps for gain. This one is a pretty straight-forward diode clip with just enough asymmetry to make it fun. The knob goes from soft clip to heavy overdrive.

`FZ` is a high-gain bipolar fuzz. The knob blends between differently phased sections which gives the knob a low-pass to high-pass frequency response as it is turned up. The distortion is a bit more subtle on this but the filter allows the user to accentuate it nicely.

Terci Ruina was not designed to be pretty or clean but was meant to invoke some of the chaos that happens when using guitar pedals. It will be noisy. It may pick up radio stations. There is a little gremlin in there.

Warranty

We will repair or replace (at our discretion) any product that we manufactured as long as we are in business and are able to get the parts to do so. We aim to support modules that have been discontinued for as long as possible. This warranty does not apply to normal wear and tear, including art/panel wear, or any products that have been modified, abused, or misused. Our warranty is limited to manufacturing defects.

Warranty repairs/replacements are free. Repairs due to user modification or other damage are charged at an affordable rate. Customers are responsible for the cost of shipping to Noise Engineering for repair.

All returns must be coordinated through Noise Engineering; returns without a Return Authorization will be refused and returned to sender.

Please `contact us (https://noiseengineering.us/pages/contact)` if you think one of your modules needs a repair.

Special thanks

- Shawn Jimmerson
- Matt Lange
- Joey Blush