

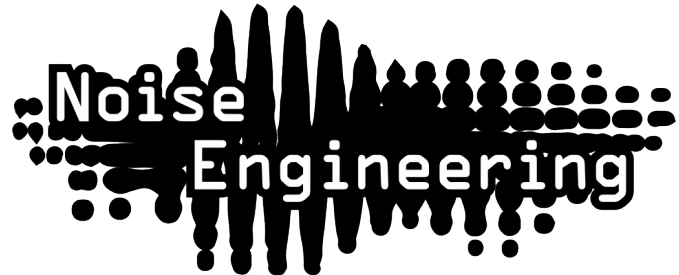
Noise Engineering

Quantus Ampla

Four channels of linear DC-coupled goodness in 6hp for all your VCA needs: ducking, mixing, CV-controlled leveling, and more!

Overview

Type	Quad VCA
Size	6 HP
Depth	.8 inches
Power	2x5 Eurorack
+12 mA	65
-12 mA	60
+5 mA	0



Quantus Ampla is a compact four-channel VCA. But it's not just any VCA: with some unique normaling, mixing, and CV options, you can use it for a plethora of tasks. Each channel has two modes: Amplify, which gives you normal VCA response, and Attenuate, which makes the VCAs close instead of open in response to positive CV. The CV inputs are circularly normalled, so you can easily create ducking effects over multiple voices, volume fades, and transitions, all with minimal patching. Plus, the outputs mix down, so it can be two two-channel mixers, a 3 channel mixer, a 4 channel mixer... Oh, and did we mention that it's DC coupled so it can process CV signals, too? The possibilities are endless.

Etymology

Quantus – from Latin: “how much, how many”

Ampla -- from Latin: “opportunity”

“You can never have enough opportunities”

Power

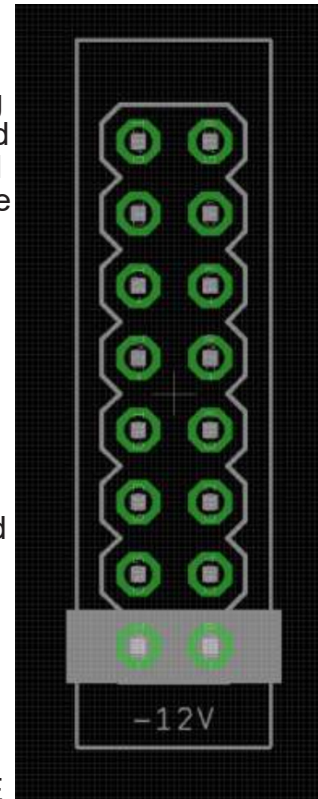
To power your Noise Engineering module, turn off your case. Plug one end of your ribbon cable into your power board so that the red stripe on the ribbon cable is aligned to the side that says -12v and each pin on the power header is plugged into the connector on the ribbon. Make sure no pins are overhanging 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 -12v 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.



Warranty

Noise Engineering backs all our products with a product warranty: we guarantee our products to be free from manufacturing defects (materials or workmanship) for one year from the date a new module is purchased from Noise Engineering or an authorized retailer (receipt or invoice required). The cost of shipping to Noise Engineering is paid by the user. Modules requiring warranty repair will either be repaired or replaced at Noise Engineering's discretion. If you believe you have a product that has a defect that is out of warranty, please contact us and we will work with you.

This warranty does not cover damage due to improper handling, storage, use, or abuse, modifications, or improper power or other voltage application.

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

Please contact us for the current rate and more information for repairs for modules that are not covered by our warranty.

Input and output voltages

Quantus Ampla's CV inputs expect 0 to +5v. Voltage above and below this range is clamped.

The VCA can handle signals up to about 20v peak-to-peak.

Interface

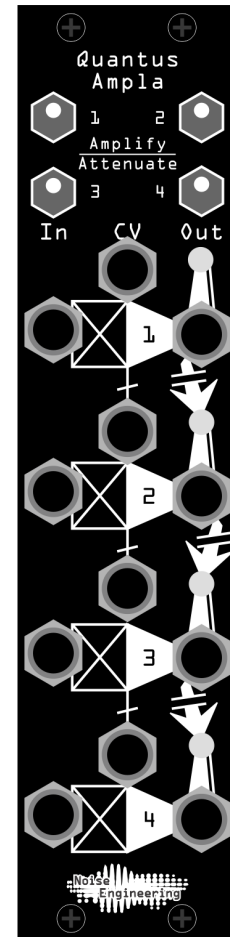
Amplify/Attenuate 1-4: Changes the way Quantus Ampla responds to CV. In Amplify mode, signals passed from In to Out will be at minimum level when a signal at the CV input is at 0 volts (or, of course, when nothing is plugged in), and at maximum level at +5 volts (normal VCA behavior).

In Attenuate mode, signals passed from In to Out will be at maximum level when a signal at the CV input is at 0 volts, and at minimum level at +5 volts (ducking behavior).

In 1-4: Input for signals to be processed by the VCA. Quantus Ampla is DC coupled, and will work with audio or CV.

CV 1-4: Control voltage input; controls the output level of the signal at the In jack.

Out 1-4: VCA output.



Patch Tutorial

Basic patch: Patch an oscillator like Loquelic Iteritas to the In jack on channel 1. Patch an envelope generator to the CV jack, then patch the Out jack to your mixer. Set switch 1 to the upper "Amplify" position. The envelope now controls the volume level of the oscillator.

If you want to control multiple oscillators, this patch can be recreated on the other channels of QA. The resulting voices can then be mixed together: for example, unpatch all Out jacks except 2 to have a mix of channels 1 and 2. Or, unpatch all Out jacks except 4 to have a mix of all 4 channels.

Ducking: Patch a decay envelope to the CV jack of a channel of QA, and set that channel's switch to the lower Attenuate setting. Patch a sound source to the In jack of that channel, and patch Out to your mixer. Mult a trigger to the decay envelope and to a kick drum. The audio through the VCA will now duck each time the kick is triggered.

Design Notes

Quantus Ampla is ancient by NE standards. It's been in the works since the dawn of time but has always been pretty low priority. Last year, faced with the pandemic, looming parts issues, and all the problems we were (are) having getting modules out, we dusted off the design and decided maybe this was our year!

We started working on it and were a little unsatisfied with a few things. Kris spent a lot of hours at the bench banging her head against things, pulling Stephen in for two-person measurements, consults, and general head scratchery. In the end, we opted to swap the op amps we used; a lot of hot air later, this solved the problems we were having beautifully.

We were good to go with it, or so we thought, but then everything was just constantly busy. We wanted to get the plugins out, and that's been a lot of work! And then there's just getting things built which is...daunting these days. So we still sat on it for a bit.

Fast forward a few months and we agreed it was just time. We dusted the poor thing off once again, and as Kris was writing copy, she said what the hell, why is this AC coupled? Is there a reason we'd want that? Much arguing later, she went back to the bench and modded the crap out of the last-built hardware. It was a struggle given where half the parts were (we tend to pack those parts in). Some plastic may have been harmed/melted in the making of the DC-coupled version that you now hold.

Fortunately, the mods were pretty easy and took only a day of work and test and we were back on track for launch. We were cranky but it was a better product for it, and isn't that why we do this?

