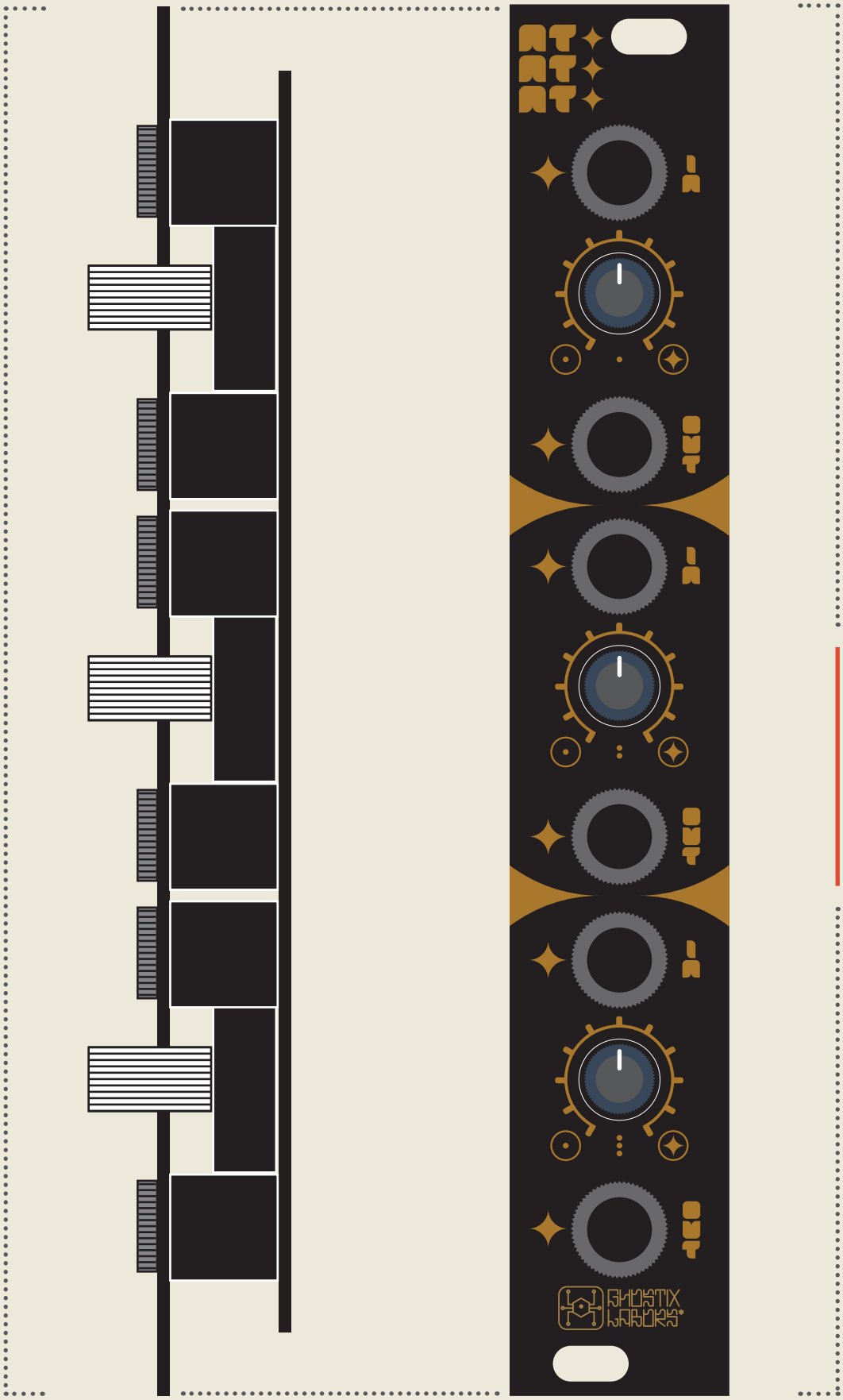
THE TRIPLE :

ATTENUATOR



3U = 128,5 mm

3 U

+12V : 0 mA

-12V : 0 mA

4 HP

20,32 mm

AN INDISPENSABLE UTILITY TOOL FOR EVERY CASE*

– 100% PASSIVE, 100% CONTROL.

Sometimes less is more. Is your LFO hitting the filter cutoff too hard? Is your oscillator screaming louder than the rest of your modules? The Triple Attenuator is the gatekeeper of your system. It needs no power, it doesn't take up any space on the bus board, and it gives you three independent channels to bring order to your patch chaos.

BILL OF MATERIALS (BOM)

For the complete module, you will need:

- POTENTIOMETERS: 3x TAYDA 100K OHM Linear Taper Potentiometer CLEAR Spline Shaft PCB Mount or similar ones.

  Value: 100k Linear (B100K).

  Shaft: 6 mm solid shaft.

  MOUNTING: These are threadless (no nuts/washers required for the panel).

- 6x Mono Jack Sockets (3.5 mm, Eurorack standard) (Thonkiconn / PJ-3001F 3.5mm Mono Phone Jack).

  NOTE: These jacks feature additional switching pins. On this specific PCB, these pins are not electrically connected but are essential for the mechanical stability of the module. No external wiring is required.

- 3x Matching Knobs (6 mm socket) **OPTIONAL**

- PCB & Front Panel (Gerber files available for download)

- Soldering equipment

When you start building a modular system, you focus on the obvious: you buy complex oscillators, wild filters, and crazy effects. You want noise, you want character. But at some point, you stand in front of the case and realize: everything is screaming at you at full force with 10 volts. There's no dynamic range anymore, just a wall of pure chaos.

This is precisely where the most unassuming hero in synthesizer history enters the scene: a simple, passive voltage divider. The concept of the attenuator is as old as electronics itself and formed the absolute backbone of signal control in early Buchla and Moog systems. It's not a shining star and doesn't generate any sound itself—it's simply the duct tape that prevents your system from musically falling apart in certain situations.

THE SECRET PATCH 01:

THE EDGE OF CHAOS (FEEDBACK TAMING)

You've already learned how to tame LFOs and scale envelopes in the Patch Guide, but here's the real fun for your lab: riding feedback loops. (you've read it, right?)

Take the audio output of your favorite delay or a highly resonant filter and patch the signal directly back into its own input. Normally, this routing would immediately result in an ear-splitting, uncontrollable screech that puts your speakers (and eardrums) to the test. (You probably already know this.)

Instead, patch this loop through a channel of the Triple Attenuator! Now you have an analog, physical outlet for destruction. You can manually crank up the feedback and balance the sound precisely on the razor's edge where the machine starts endlessly singing to itself without ever completely escalating. You turn a static short circuit into a playable, living instrument.

STEP-BY-STEP ASSEMBLY

⚠ ATTENTION, IMPORTANT SEQUENCE! SINCE THE POTENTIOMETERS ON THIS MODULE ARE NOT SCREWED TO THE FRONT PANEL, THEIR ALIGNMENT IS EXTREMELY IMPORTANT TO PREVENT BINDING OR MISALIGNMENT.

❶ Insert the jacks **(DO NOT SOLDER!)**: Place all six jack sockets onto the circuit board, but do not solder them yet!

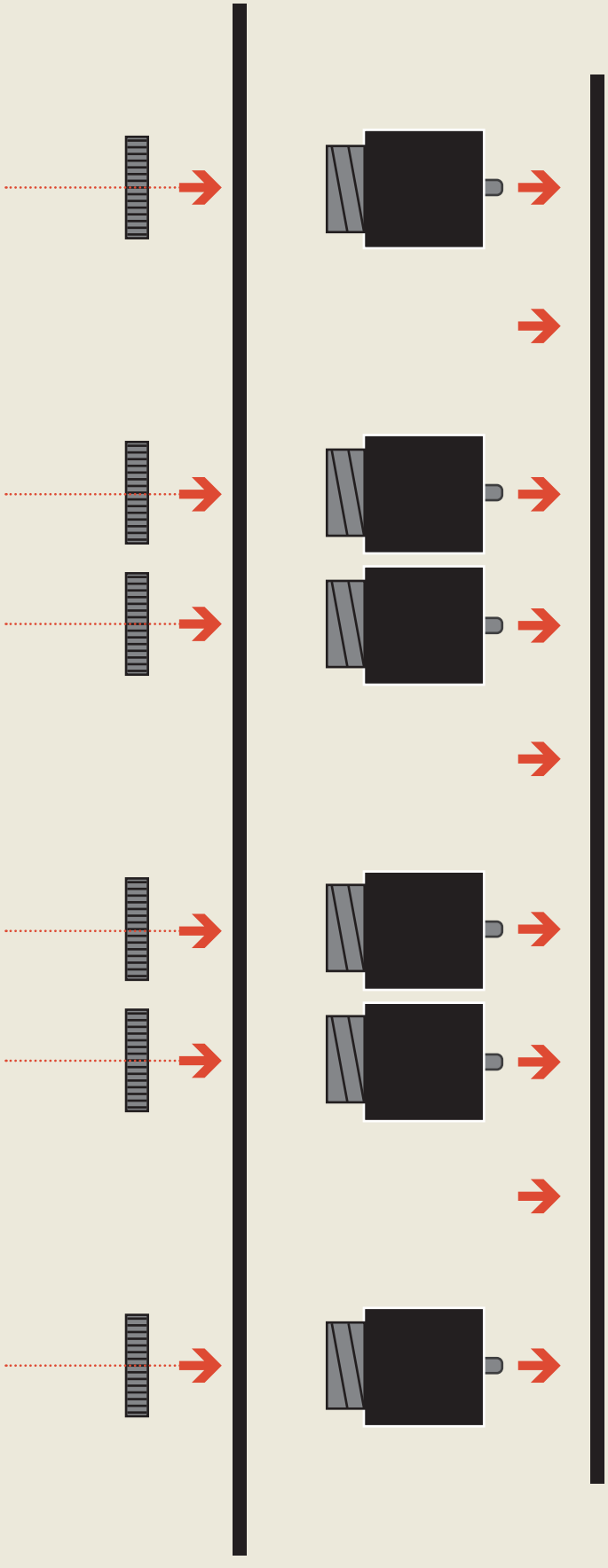
❷ **THE „SANDWICH" ALIGNMENT:** Now place the front panel over the jacks and hand-tighten the nuts on the sockets. This forces the jacks into the exact correct, straight position between the circuit board and the front panel.

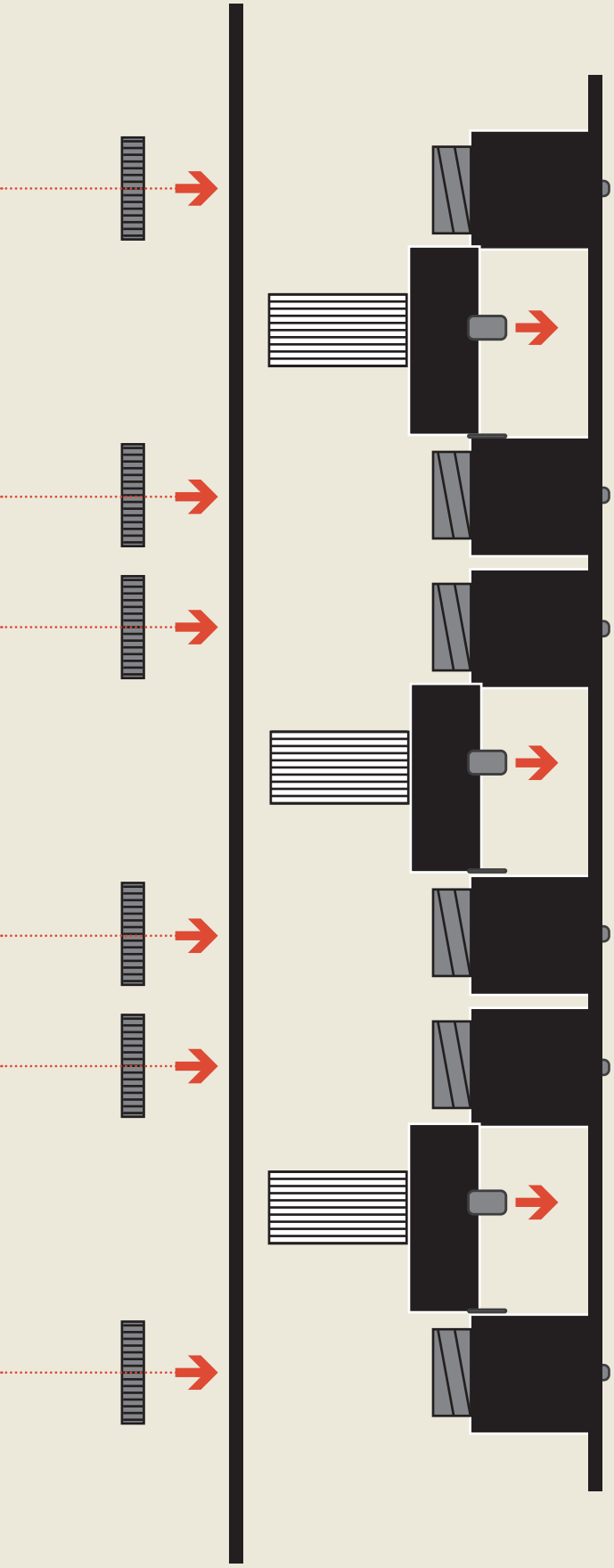
❸ **SOLDER THE JACKS:** Only now, when everything is secured by the front panel, turn the „sandwich" over and solder the jack pins to the back of the circuit board.

❹ **THE POTENTIOMETERS:** Briefly remove the front panel again. (unscrew the nuts of the jack sockets again) Insert the three potentiometers into the designated holes. The footprints are intentionally manufactured with tight tolerances, so press them firmly onto the circuit board. Place the front panel back on for a final visual inspection. If the potentiometers protrude just through the holes: **remove the front panel again and solder the potentiometers in place!**

❺ **GROUND CHECK:** Since the module is passive, a clean ground connection is crucial. Your schematic connects pin 1 of each potentiometer to the shaft of the jacks. Use a multimeter to check that all ground points have continuity. (should be okay, if not, inspect your solder-joints) Use the longest leg on the side of your input and output jacks.

❻ **FINAL ASSEMBLY:** Replace the front panel, screw in the jacks, and **(optionally)** attach the knobs to the 6 mm potentiometer shafts – done!





SPECS AT A GLANCE

- Width: 4 HP
- Depth: Very shallow (skiff friendly)
- Power consumption: 0 mA (passive!)
- Function: Triple attenuator for audio and CV signals.

PATCH GUIDE (QUICK & EASY)

❶ **LFO Taming:** Patch a fast LFO into the input and the output into the FM input of your VCO. Use the attenuator to transform a wild siren into a subtle, musical vibrato.

❷ **Envelope Scaling:** Not every VCA needs the full 10V of your envelope. Insert the attenuator to precisely control the „snap" of your percussion sounds.

❸ **The External Volume Control:** Do you have a module that doesn't have an output control (like some raw oscillators or feedback loops)? Patch the final audio output through the Triple Attenuator before the signal goes to your mixer. This gives you a „master volume knob" for any module directly in the patch, without having to adjust the mixer.

DER SECRET-PATCH 02:

THE MACRO CONTROLLER

Do you have a constant DC voltage somewhere in your system (a +5V or +10V offset output)? Patch this static voltage into the input of your triple attenuator. Suddenly, the small passive control is no longer an attenuator, but a manual macro controller! Run the output through a multiple (a splitter) and route the control voltage simultaneously to the filter cutoff, delay time, and FM modulation of your oscillator. With just a single turn of the attenuator, you can now control the entire chaos of your patch and create massive live risers—all without menus or expensive digital modules.

NOW YOU HAVE THE POWER TO TAME THE CHAOS!

Never underestimate this little beast. It's not a simple, boring passive module—it's the ultimate multi-power tool for your lab. Whether you're taming wild LFOs or giving raw oscillators their own volume control before the main mixer, you now have complete control over the signals. Patch it and rule!

BESTELLUNG

JLCPCB-Bestellanleitung: Frontpanels stressfrei ordern

WICHTIG VORAB: EIN MODUL = ZWEI PLATINEN!
Ein Eurorack-Modul besteht bei uns immer aus zwei separaten Teilen:

1. Dem Mainboard (die eigentliche Platine mit den elektronischen Bauteilen).

2. Dem Frontpanel (die schicke Blende mit der Beschriftung, durch die später die Potis und Buchsen gesteckt werden).

Du musst also für jedes Modul zwei ZIP-Dateien (Gerber-Daten) nacheinander hochladen und separat in den Warenkorb legen! JLCPCB ist günstig und schnell, aber die Optionen können verwirren. So machst du es richtig:

TEIL 1: DAS MAINBOARD (DIE ELEKTRONIK)
Klicke auf Add your gerber file und lade die ZIP-Datei für das Mainboard hoch. Das System erkennt die Maße meist automatisch.

PCB Qty: 5 Stück (die günstigste Mindestmenge).

PCB Thickness: 1.6 mm ist der Standard für Mainboards.

PCB Color: Grün ist der Klassiker und wird am schnellsten gefertigt. Deine Wahl.

Surface Finish (Extrem wichtig!): Wähle hier NIEMALS „HASL (with lead)". Das enthält giftiges Blei! Wähle zwingend LeadFree HASL-RoHS. Das ist bleifrei, lässt sich super löten und ist die günstigste Variante.

Klicke auf „Save to Cart" (In den Warenkorb).

TEIL 2: DAS FRONTPANEL (Die Optik)
Gehe zurück zur Startseite, klicke wieder auf Add your gerber file und lade nun die ZIP-Datei für das Frontpanel hoch.

PCB THICKNESS: Wähle hier 1.6 mm oder 2.0 mm. Dünnere Platinen biegen sich durch, wenn du später Kabel einsteckst!

PCB COLOR: Such dir deine Wunschfarbe für den Hintergrund aus (z. B. Black, Matte Black, White).

SURFACE FINISH (SILBER ODER GOLD?):
* **Die günstige Version (Silber):** Wähle auch hier LeadFree HASL-RoHS. Die unlackierten Flächen (wie Schriften oder Ränder) werden hierbei silberfarben verzinnt.

DIE PREMIUM-VERSION WIE IN DER ABBILDUNG (GOLD):
Wähle ENIG (RoHS). Hier werden die unlackierten Flächen mit einer echten, hauchdünnen Goldschicht überzogen. Sieht extrem edel aus, kostet aber ein paar Euro mehr. Beide Optionen sind bleifrei!

⚠ DIE GRÖSSTEN FALLSTRICKE!
Wenn du diese Dinge nicht beachtest, ärgerst du dich beim Auspacken garantiert:

DER NUMMER-FAIL (NUR BEIM FRONTPANEL WICHTIG): JLCPCB druckt standardmäßig eine Produktionsnummer auf jede Platine. Auf einem Frontpanel sieht das furchtbar aus! Scrolle nach unten zu Remove Order Number und wähle Specify a location (wenn auf der Rückseite ein Platz markiert wurde) oder Yes, damit sie komplett weggelassen wird (kostet oft ca. 1,50 € extra, rettet aber die Optik!). Beim Mainboard ist die Nummer egal. (Inzwischen ist diese Option standardmässig ausgewählt = also Augen auf!)

VERSAND & ZOLL:
Wähle beim Checkout eine Versandart, bei der die Steuern vorab bezahlt werden (z. B. Global Standard Direct Line oder EuroPaket). Achte auf das Kürzel IOSS oder DDP (Delivered Duty Paid). So kommt das Paket direkt zu dir nach Hause, ohne nervige Zoll-Gänge.

FERTIG!
Bezahlen und auf den Postboten warten.