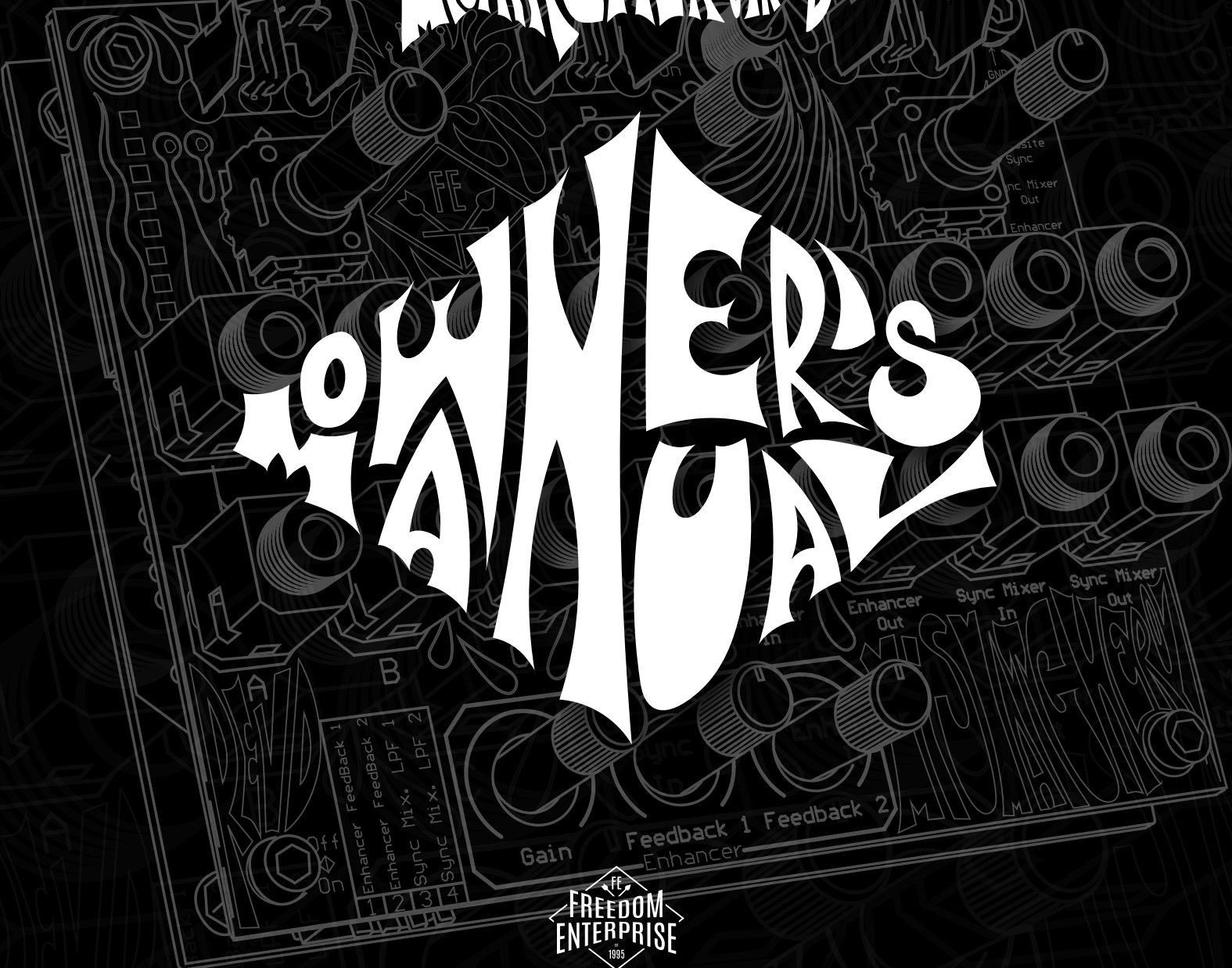


WATCHER DREYD

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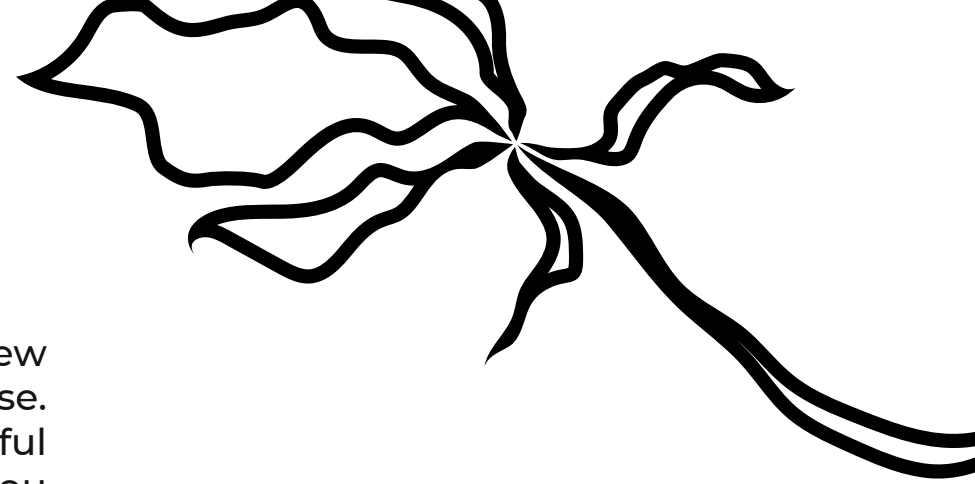


WARNING – WHEN USING ELECTRIC PRODUCTS, THESE BASIC PRECAUTIONS SHOULD ALWAYS BE FOLLOWED.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use apparatus near water - for example, but not limited to: near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool or the like.
6. Clean only with dry cloth.
7. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
8. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
9. Use attachments/accessories specified by the manufacturer. Ensure that any external equipment used in conjunction with this product is installed according to the safety specifications supplied with that equipment.
10. Unplug this apparatus during lightning storms or when unused for a long period of time.
11. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings. Do not expose this product to rain or moisture.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as if power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

THANK YOU.

Thank you for purchasing the new MisMatcher01 from Freedom Enterprise. It has been engineered to be a powerful yet compact and handy tool to help you throughout your journey to create effects to your heart's desire. By reading this manual you'll become familiar with the MisMatcher01, how to use it and how to make the most of it. Good luck, and have a great experience with your brand-new video glitcher from Freedom Enterprise.



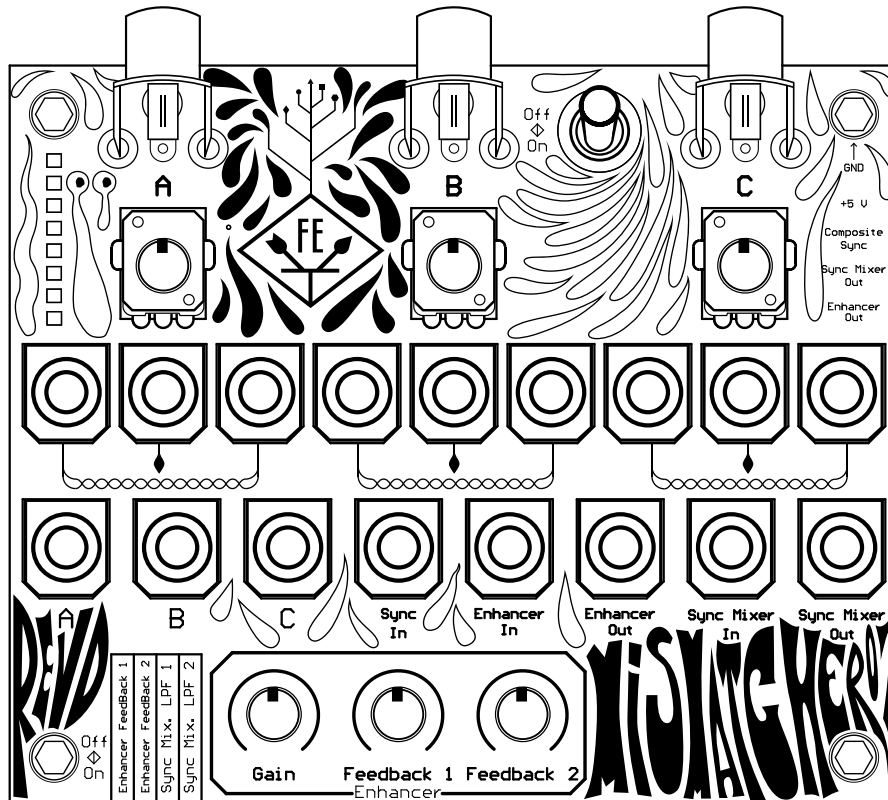
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ASSEMBLY

Assembly of the new MisMatcher01 REV.D has been greatly simplified compared to previous versions. With most of its critical components already soldered in place, users only have to solder a handful of jacks and potentiometers, reducing human error during assembly.

User Interface



Start by snapping the three potentiometers in place, followed by the three gold RCA jacks and lastly the seventeen PJ-341 jacks.

Secure the PCB and solder these components. Keep in mind that some components might move when you flip the PCB upside down or while soldering. To avoid this, press the components against the PCB as the solder flows to ensure their most upright position.

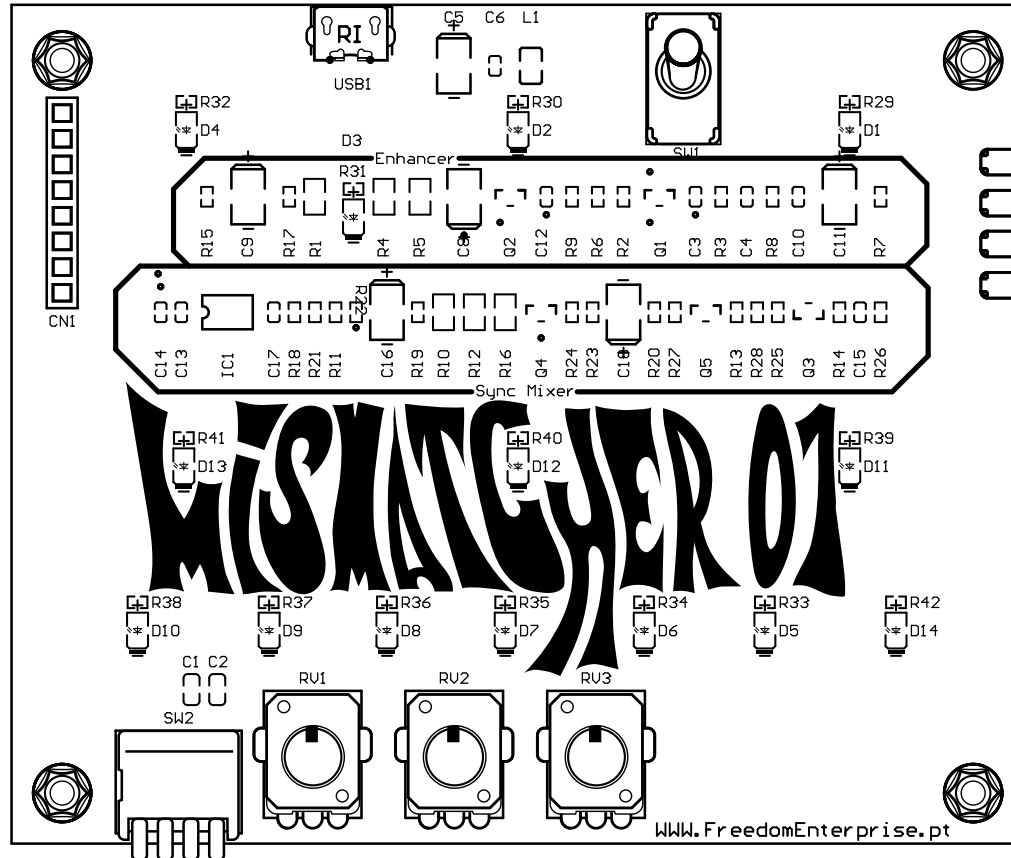
Finish off by performing a visual inspection on the solder joints.

The 8-pin male header will be assembled later.

Main PCB

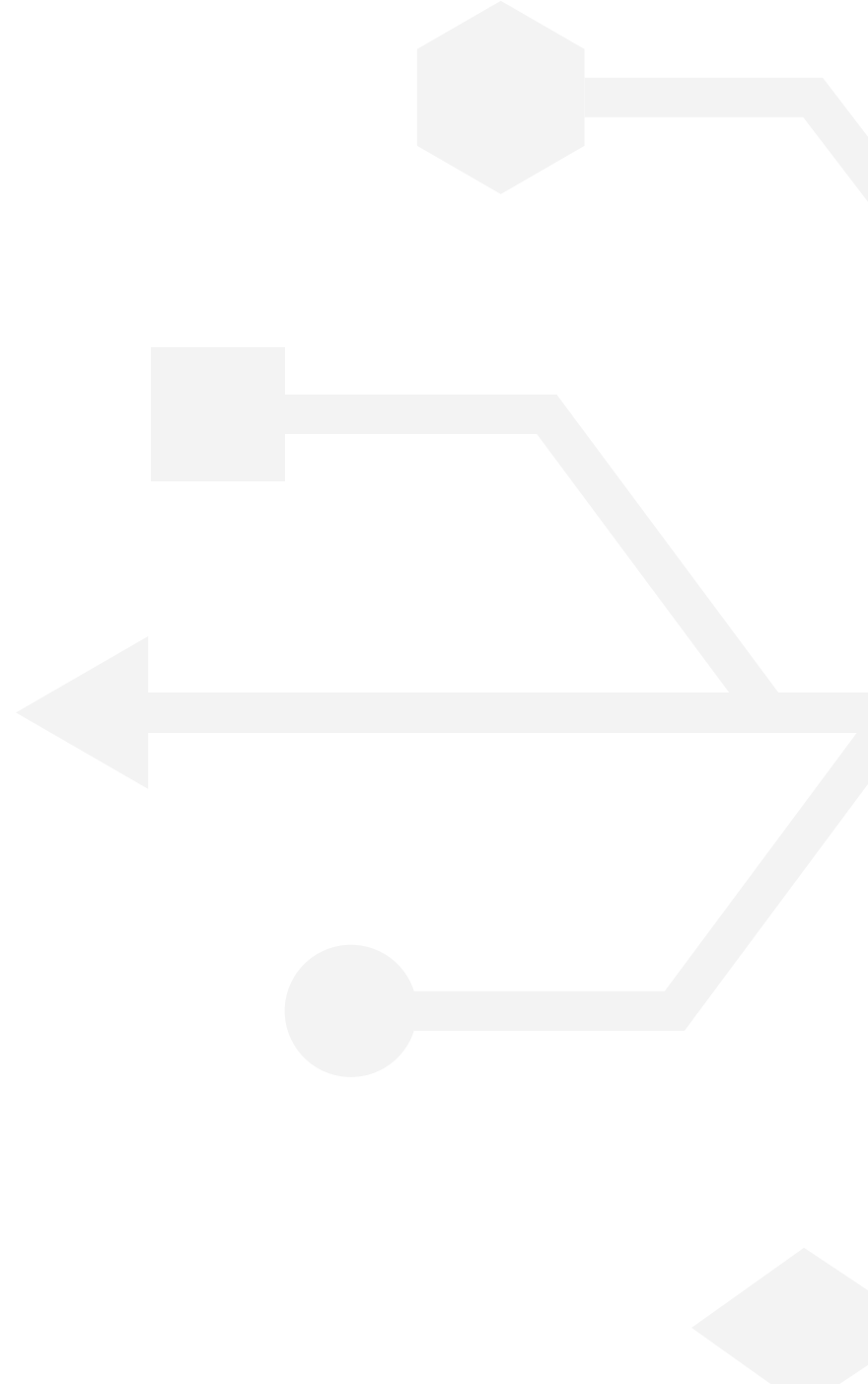
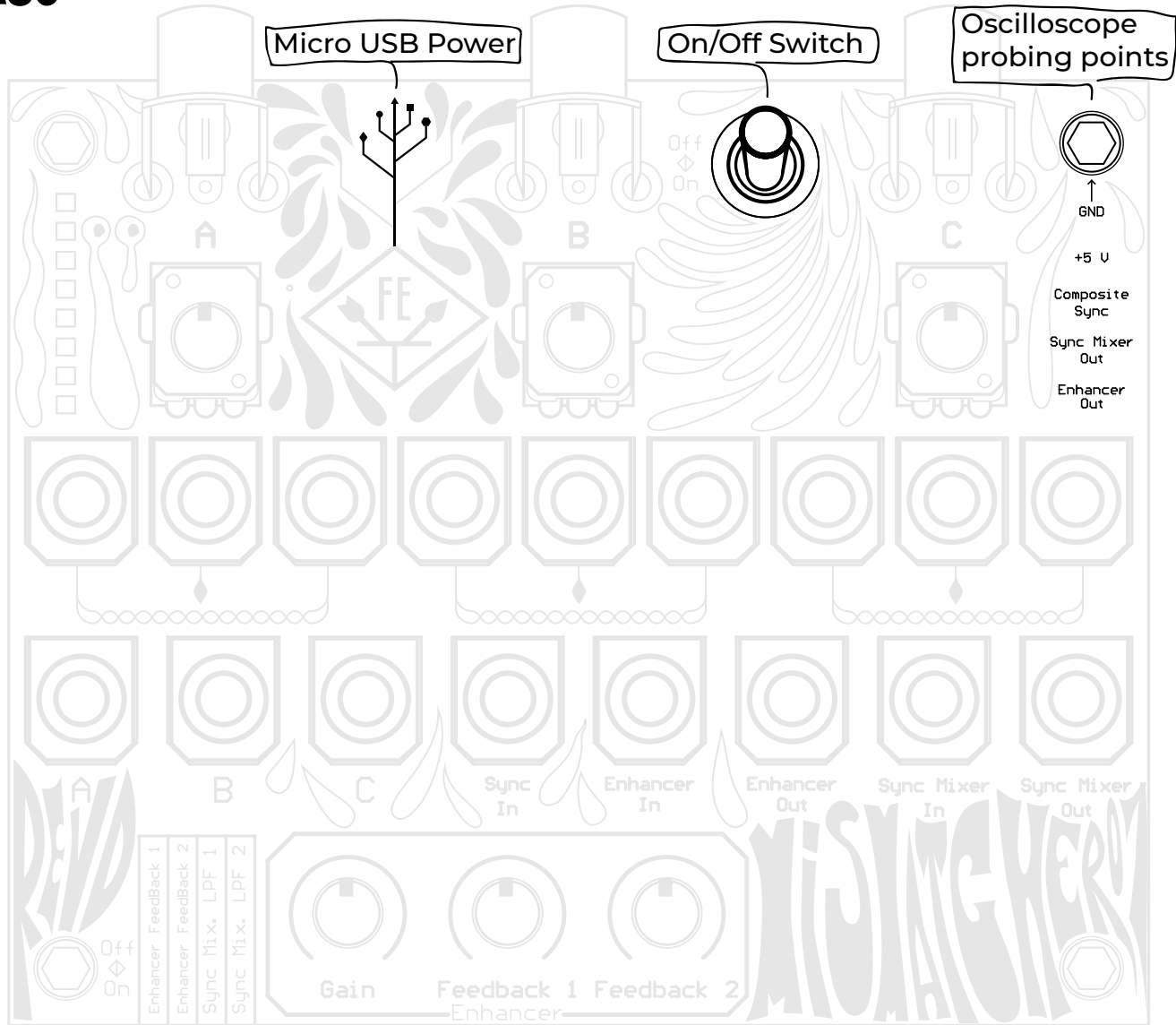
Start by snapping the three potentiometers in place as well as the piano DIP switch. To ensure the correct placement of the power switch and the male and female header, place these components and then secure the two PCBs with the 8 screws and four standoffs provided.

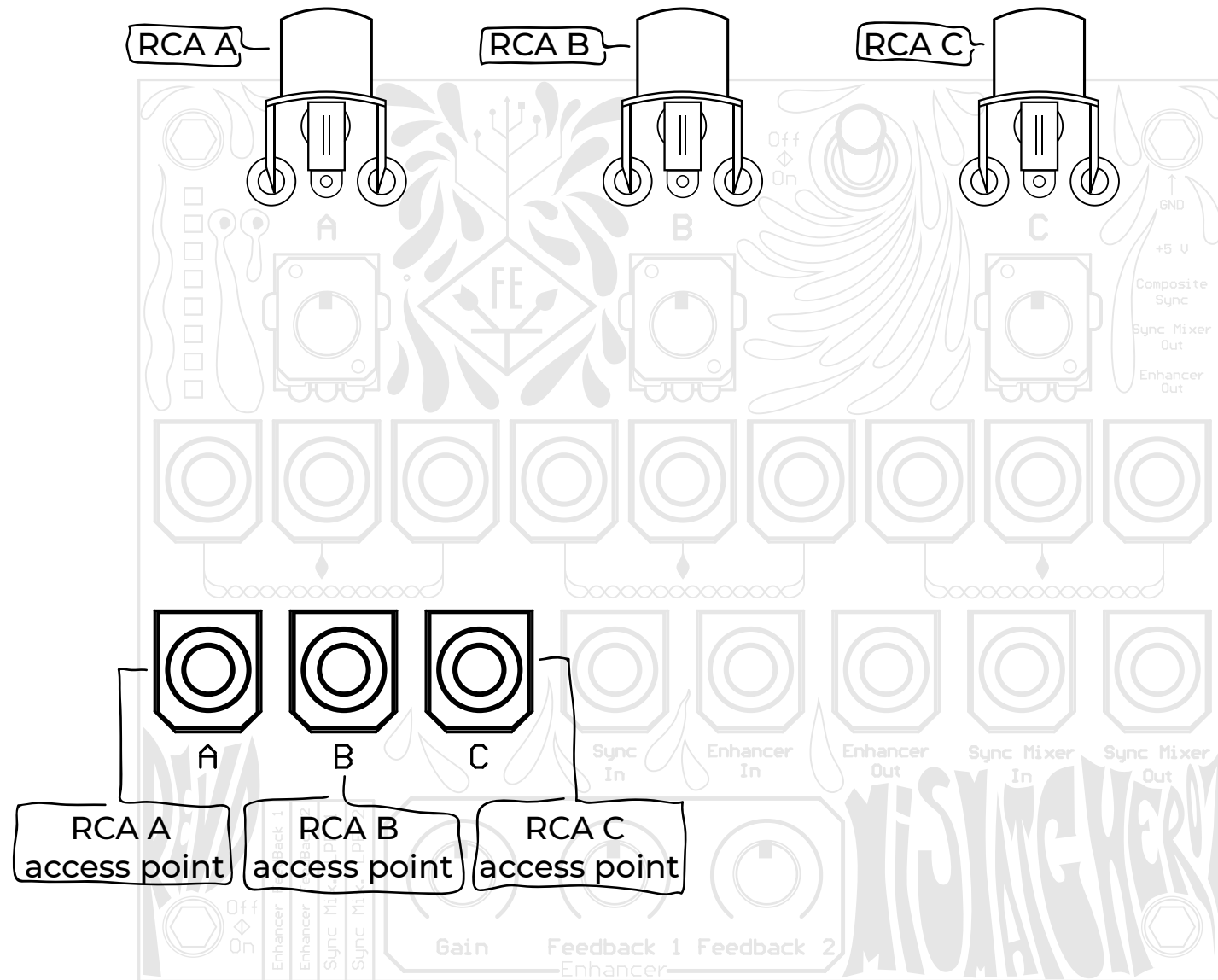
Solder these components and finish off with a visual inspection of the solder joints.



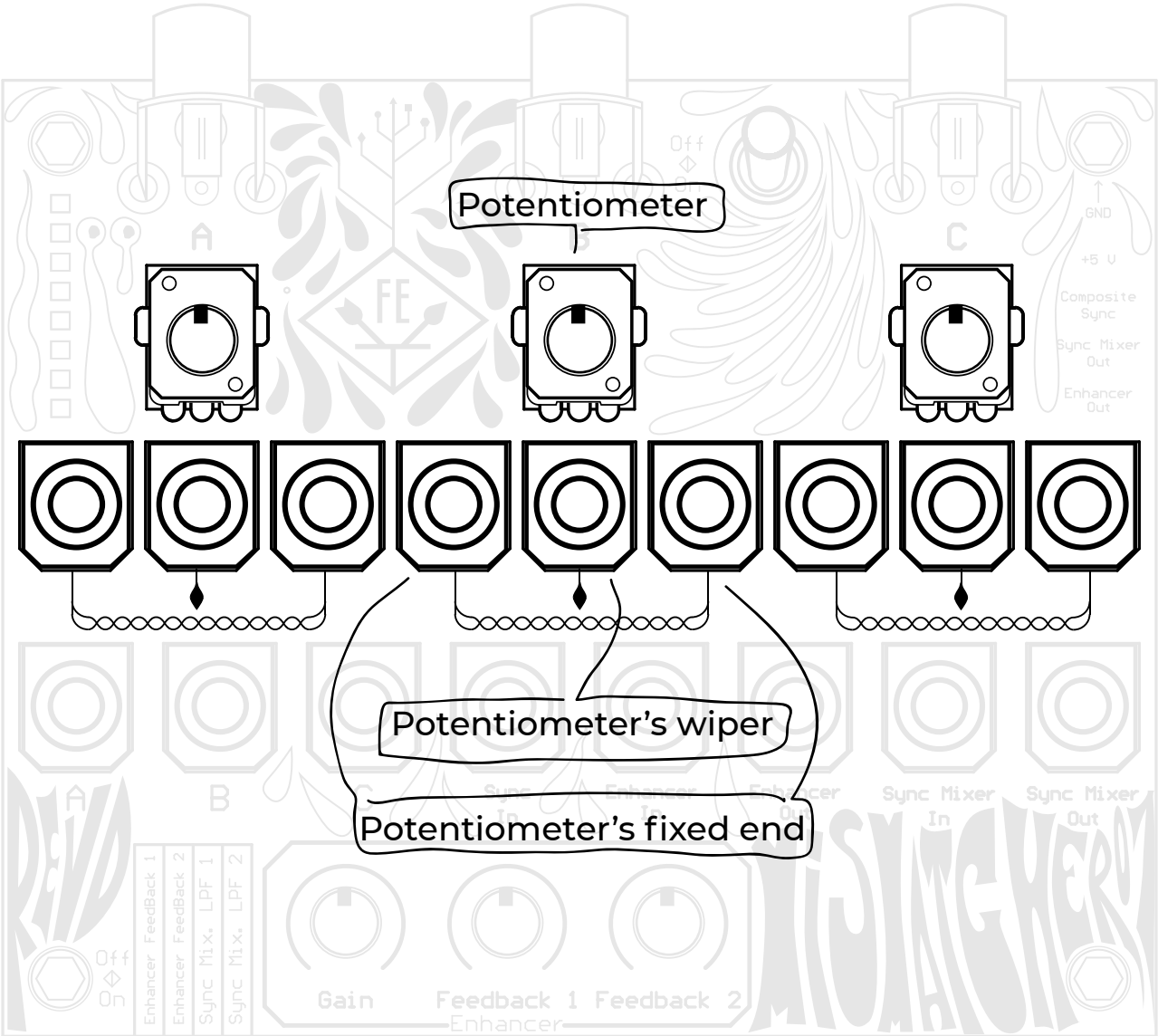
CONTROLS

Misc

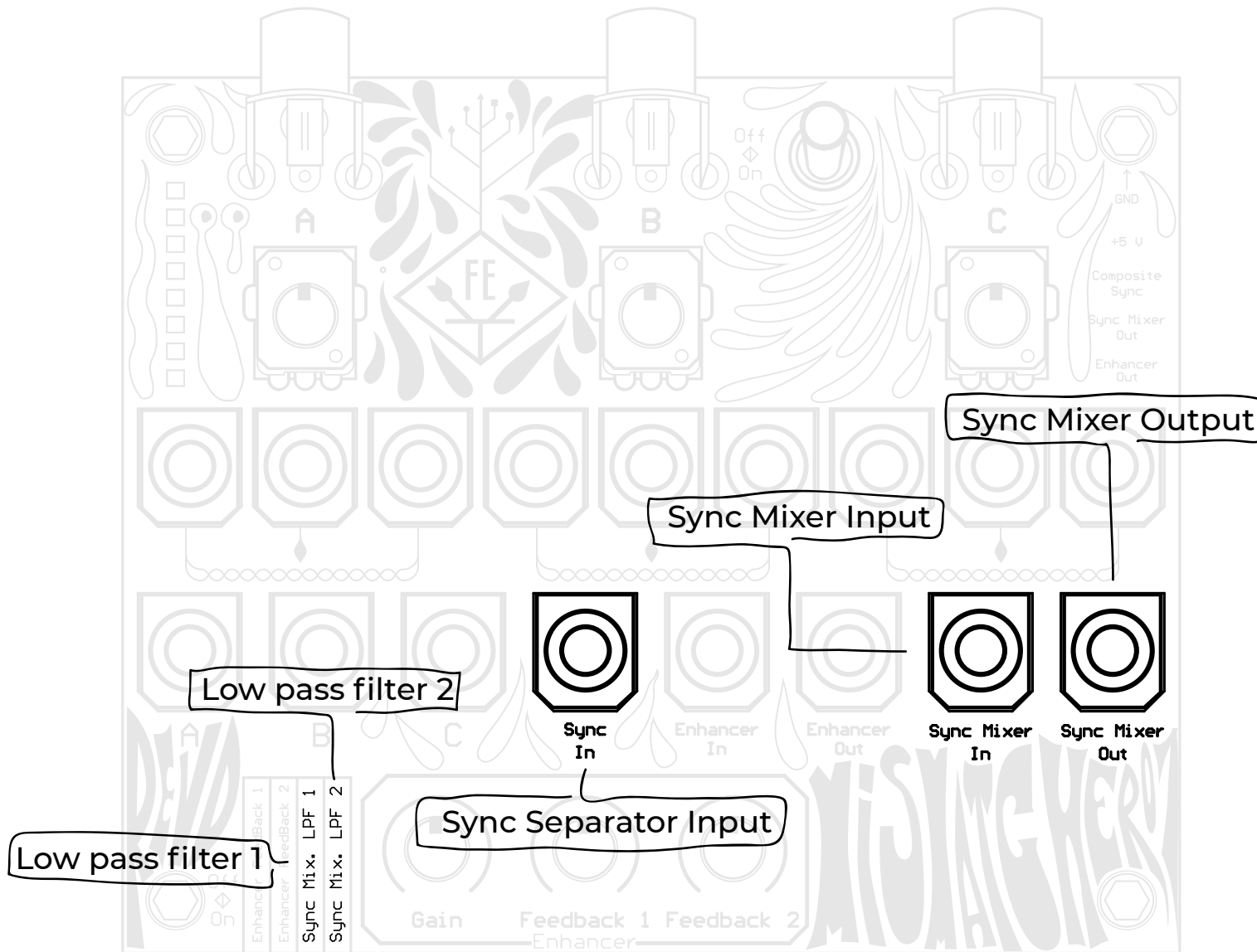




Mixer/Attenuators



Sync Mixer



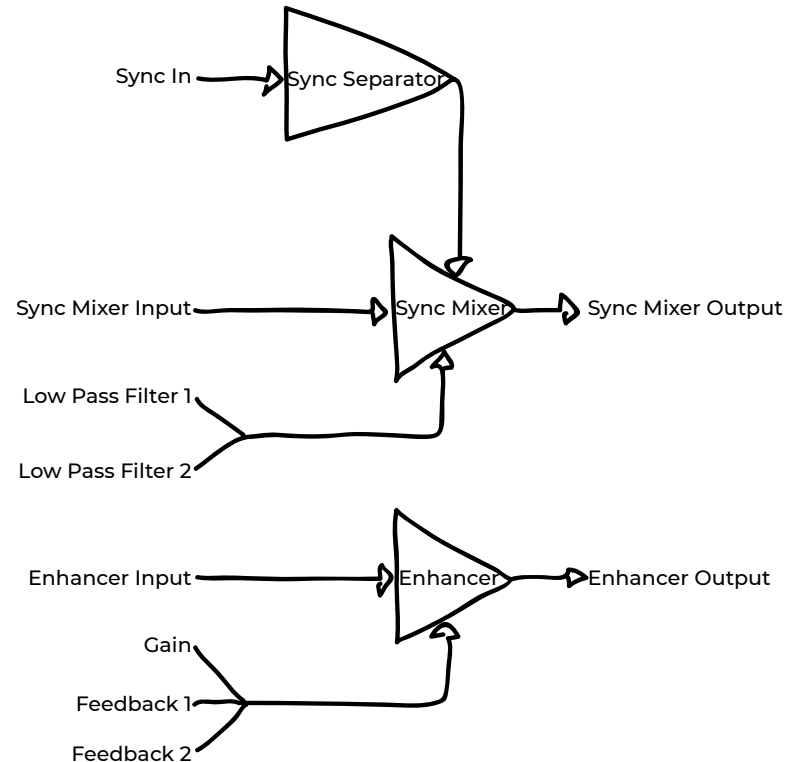
PRINCIPLE OF OPERATION

An electronic analog video glitcher is a device designed to distort analog video signals using analog circuitry.

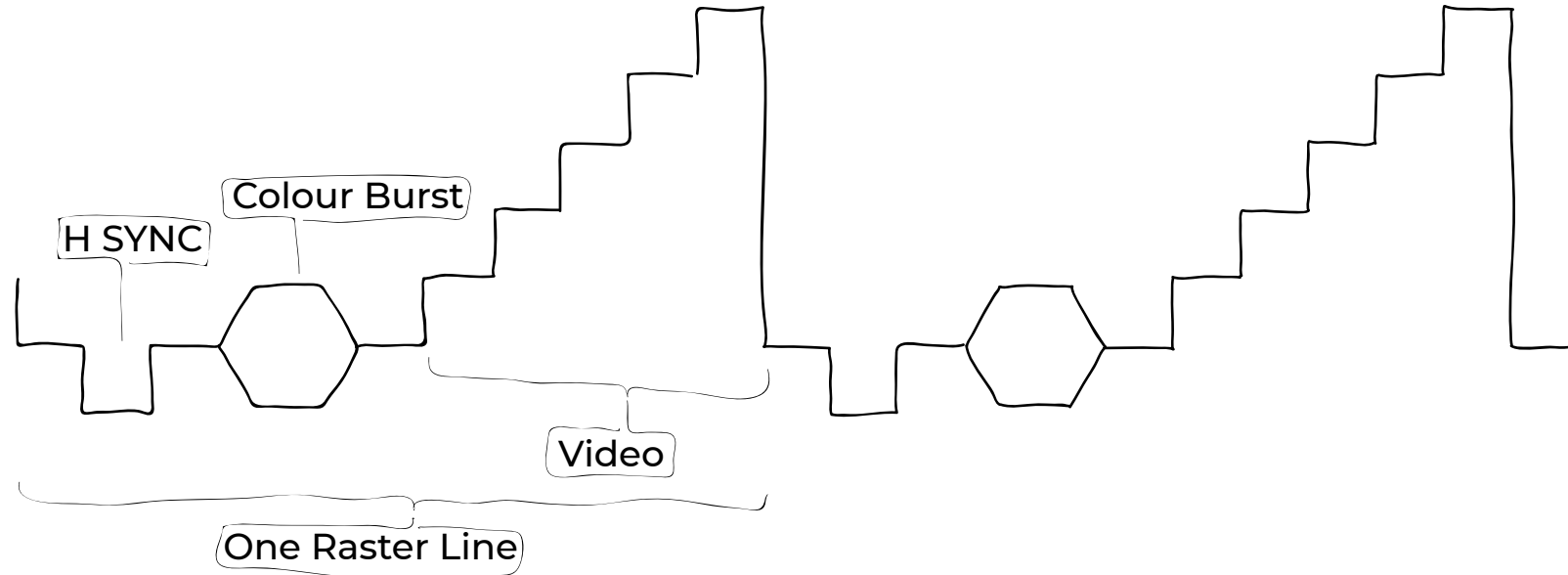
The MisMatcher 01 works with composite video, the yellow RCA jack from cameras and monitors, and contains three different analog circuits, Sync Separator, Sync Mixer and Enhancer. Feedback and gain controls are available for the Enhancer. These circuits can be used individually or interconnected between each other.

To connect cameras and monitors to the MisMatcher 01 you just need a male-to-male RCA cable. These are connected through the gold RCA jacks in the front of the unit and from there on you'll only need to use patch cables to interconnect the previously mentioned circuits.

The MisMatcher 01, like a guitar pedal, is used inline in between the source of the signal and its destination. A quick example would be a camera connected to the Enhancer In and the Enhancer Out connected to a monitor. To power the MisMatcher 01, you'll only need a USB charger and Micro USB cable. If you see horizontal lines in the screen, this is due to a noisy USB charger. Replacing the charger will resolve the issue.



BASICS OF ANALOG VIDEO SIGNALS



An electronic analog video glitcher is a A composite video signal, or CVBS, is comprised of colour or chroma, video or luma, blanking and sync information in only one channel. CRT monitors draw images using a process called raster scan, where the image is drawn line by line, from top to bottom, left to right. Looking at a video signal through the help of an oscilloscope we can determine some of its components. Each line starts with the horizontal sync pulse which lets the monitor know it's time to draw a new line. After that we have the colour burst, which gives the base reference for the colours to be drawn. Next, we have the picture information which contains the luma, brightness information and chroma, HUE and saturation. A new line is drawn once the monitor receives another horizontal sync pulse. This process is repeated across the whole monitor multiple times a second to create the illusion of moving images. The example given would display 5 horizontal grey bars with increasing brightness if feed onto a CRT Monitor.



FEATURES

Passive Mixers / Attenuators

The three potentiometers in the user interface can be used to either attenuate the intensity of a video signal, or to fade between two different video signals. The potentiometer's jacks are automatically connected to ground if no patch cable is inserted. Thanks to this you can easily create an attenuator by connecting your video source to one of the potentiometer's fixed ends and leaving the other fixed end unplugged. The attenuated signal can be accessed through the wiper jack in the middle of the potentiometer. To fade between two video sources, simply connect one source to one fixed end of the potentiometer and the other video source to the other fixed end. The wiper will give you the mix between the two.

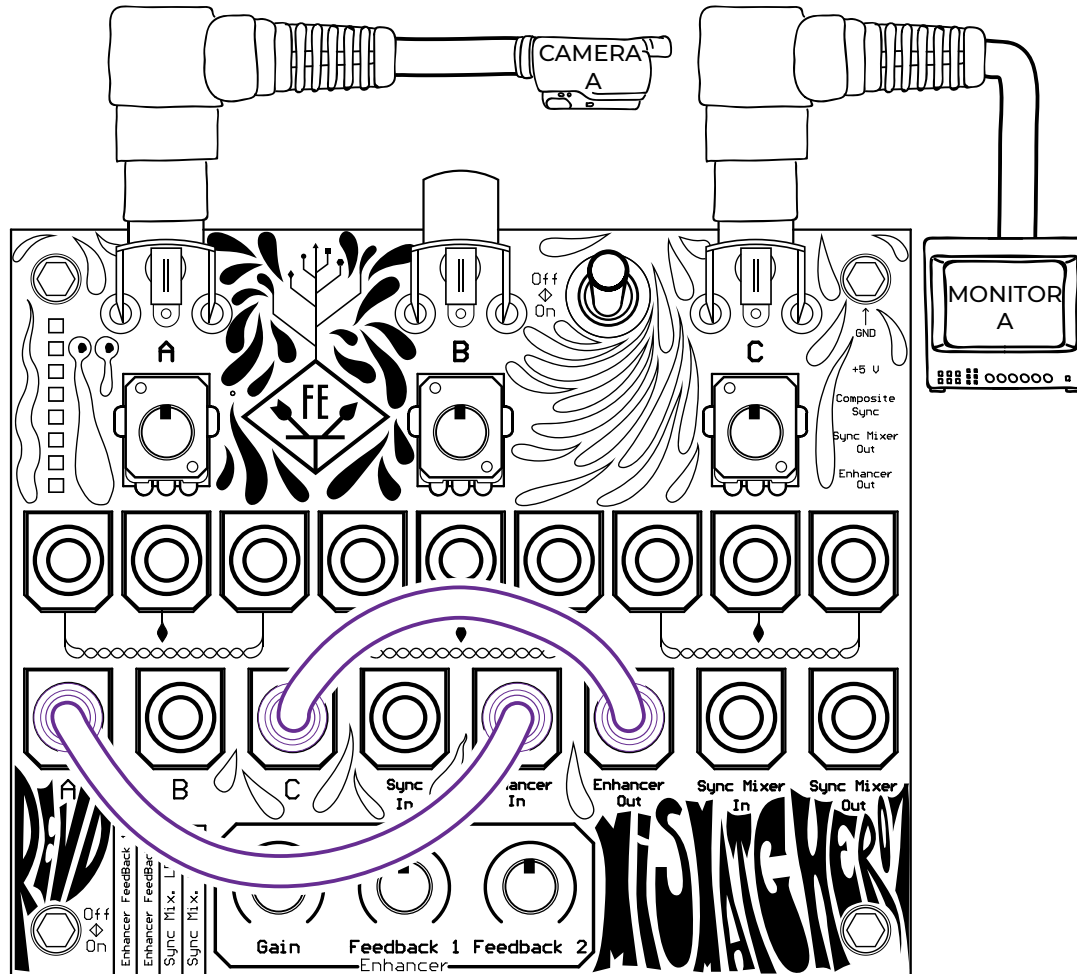
Sync Separator And Sync Mixer

The key to a stable picture is a good sync signal. The distortion of video signals can deteriorate sync, leading to horizontal or vertical scrolling of video on screen. When the loss of sync is undesired by the user, the Sync Separator and Sync Mixer can come into play. The Sync Separator extracts the sync portion of the video signal. The Sync Mixer then takes the video signal connected at the Sync Mixer In and remixes it with the sync provided by the Sync Separator, resulting in a stable image. Instead of restoring the sync of a video signal, the user can also remix one video source with the sync signal from another video source, resulting in a scrolling image with constructive and destructive interference.

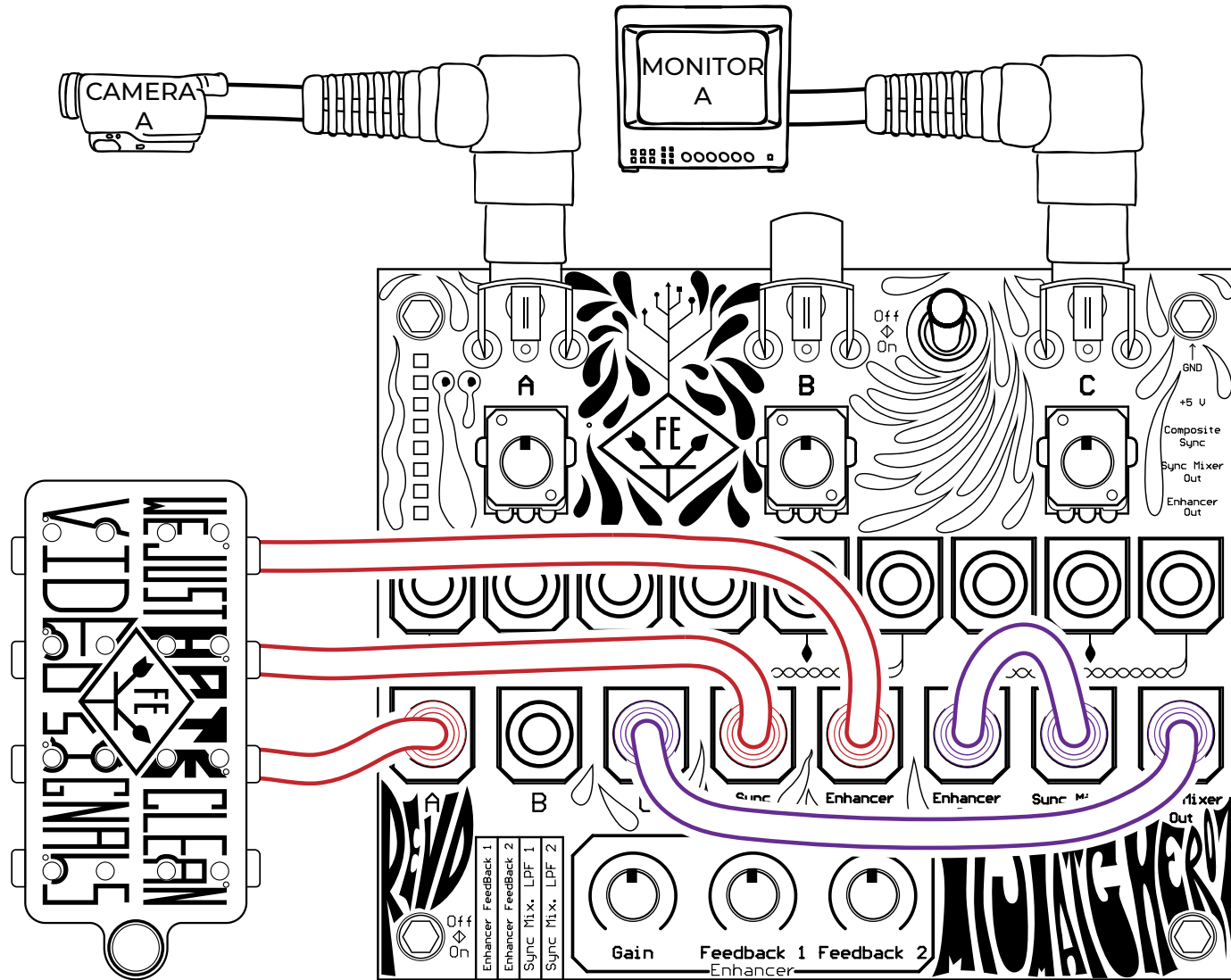
Enhancer

This enhancer can be used to either boost saturation and sharpness of the video or, using the provided Gain and Feedback 1 and 2 controls, to distort the video and create interesting effects. The gain controls how much the signal is amplified. Feedback 1 and 2 takes video from different stages of the circuit and feeds it back into the Enhancer's input.

PATCHING EXAMPLES

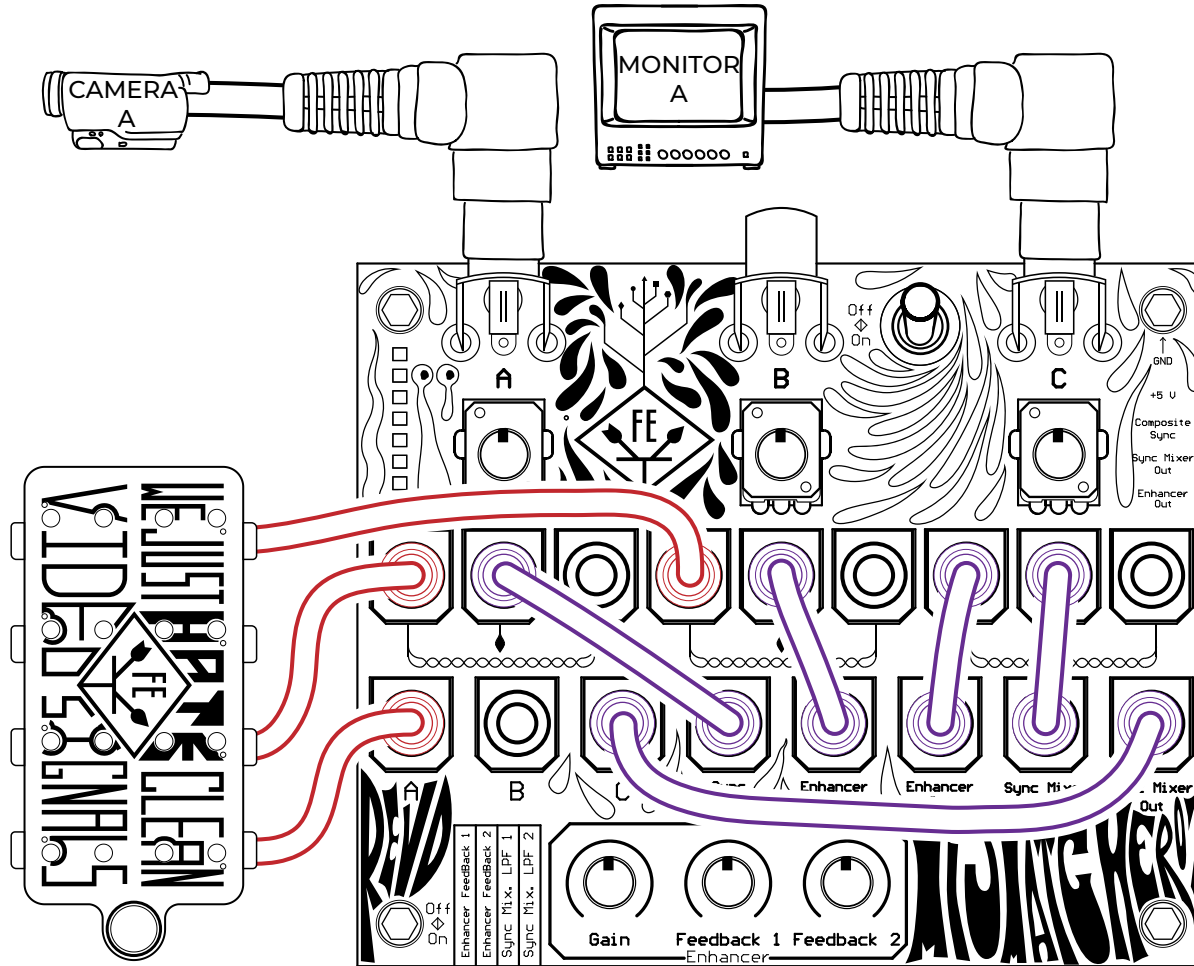


In this first example connect camera A to RCA A and monitor A to RCA C. Then patch camera A to Enhancer In and monitor A to Enhancer Out. Control the enhancer through its gain, feedback 1 and 2 knobs, as well as the DIP switch.

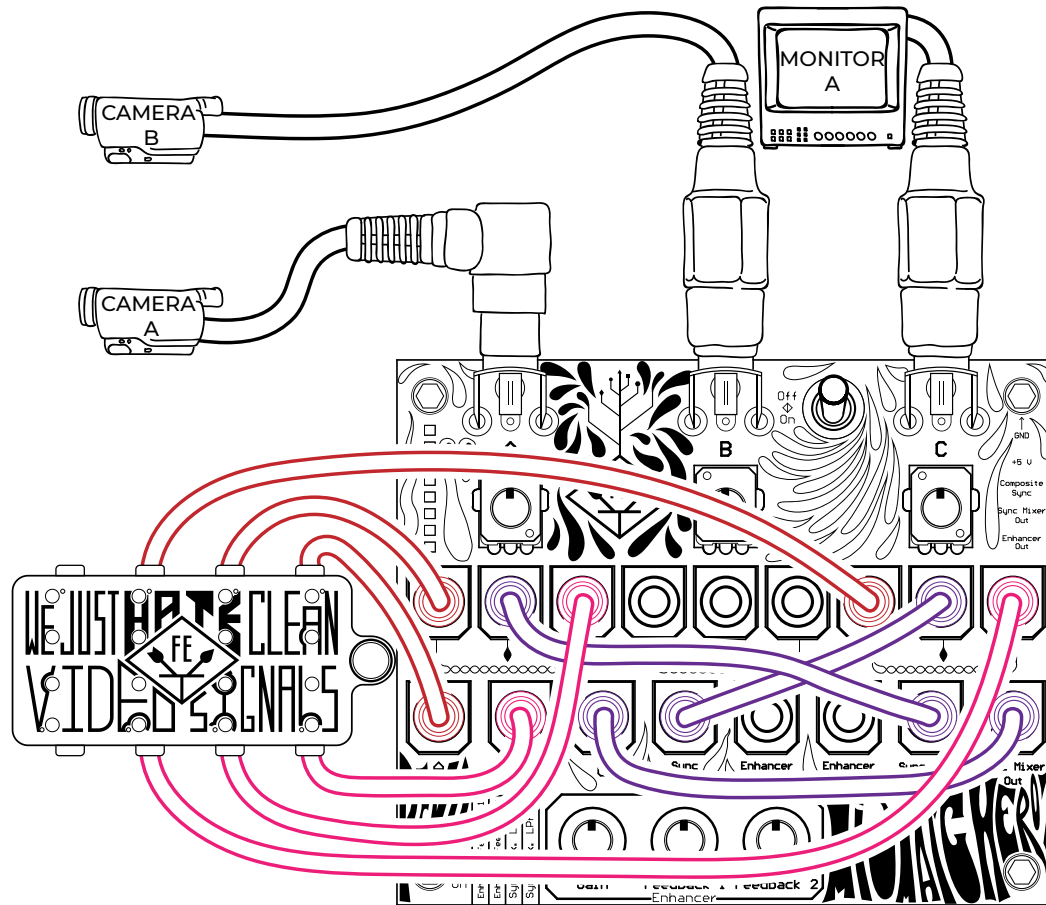


You may find that, if you push the Enhancer too hard, you may lose sync on your monitor. To solve this, first split camera A into Sync In and Enhancer In. Then patch the Enhancer Out into the Sync Mixer In and finally Sync Mixer Out to monitor A.

This way you restore your video's sync after the Enhancer, with the help of the Sync Mixer, using the video signal provided on the Sync In as reference.



You can take it one step further and use the Sync Mixer as a glitcher. Split camera A into one of the pot's fixed end and into another pot's fixed end. Patch the first pot's wiper to the Sync In. Patch the second pot's wiper to the Enhancer In. Patch the Enhancer Out onto the third pot's fixed end. Patch the third pot's wiper to the Sync Mixer In and finally the Sync Mixer Out to monitor C. The first pot creates a sort of luma keying effect. The other two act as attenuators. Start with them on full counter clock wise and go from there. You can also use the Sync Mixer's low pass filter to create a ghostly effect.

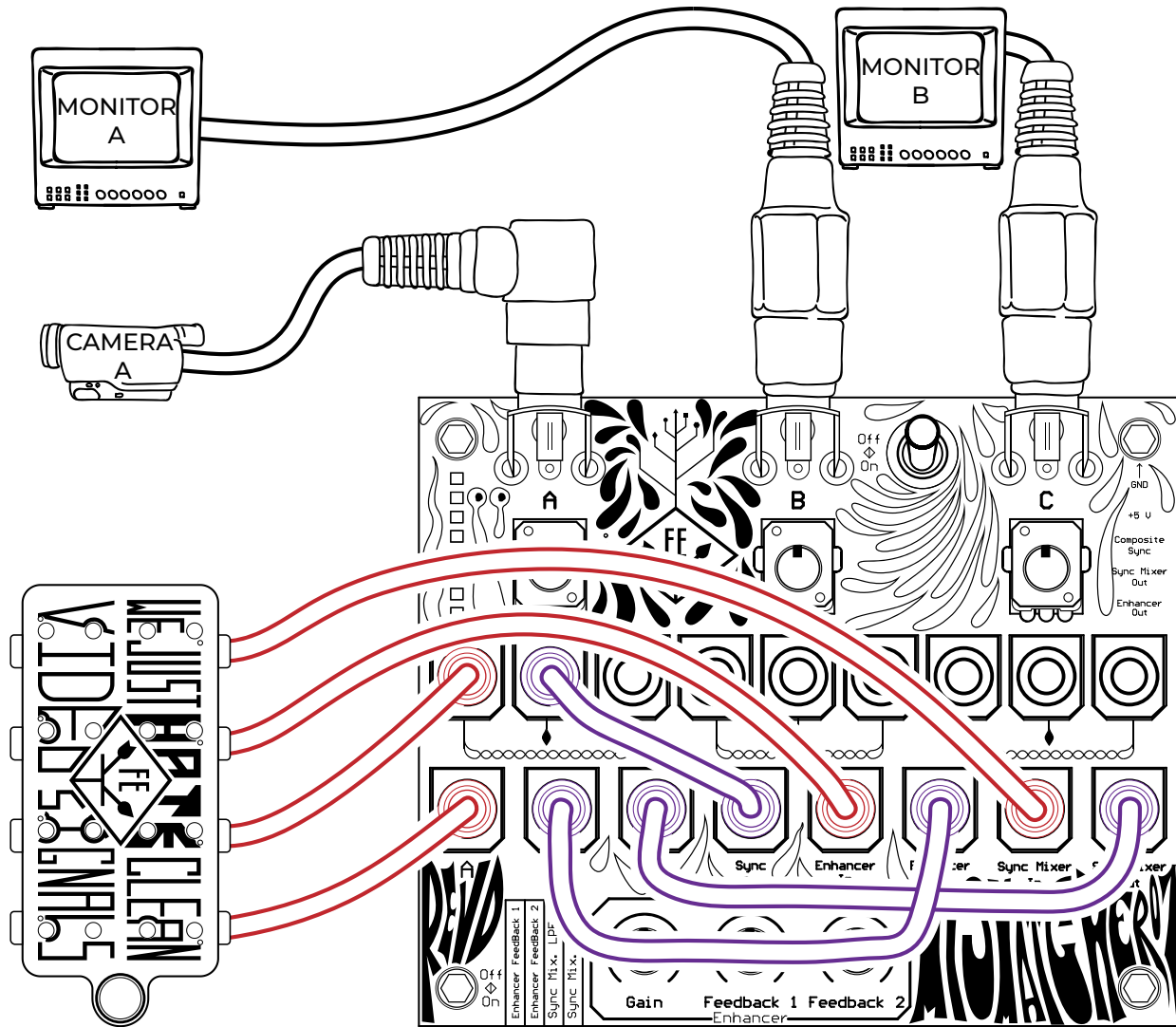


You don't have to limit your workflow to only one camera. In this example we'll create a more advanced Karl Klomp style video mixer.

Connect camera A to RCA A, camera B to RCA B and monitor A to RCA C. Split camera A onto the first pot's fixed end and the third pot's fixed end. Split camera B onto the first pot's other fixed end and the third pot's other fixed end.

Patch the first pot's wiper into Sync Mixer In. Patch the third pot's wiper into Sync In. Patch Sync Mixer out to monitor C.

The first pot act as a dirty fader between camera A and B. The third pot fades between camera's A and B sync. This sync signal is what the final result will be synced to.



If you are more interested in the duality of two monitors you can glitch one camera with the Sync Mixer and Enhancer, separately, and send each one to its respective monitor. Connect camera A to RCA A, monitor A to RCA B and monitor B to RCA C. Split camera A into the first pot's fixed end, Sync Mixer In and Enhancer In. Patch the first pot's wiper to Sync In. Patch Sync Out to monitor A and Enhancer Out to monitor B.

SPECIFICATIONS

Size	100x83 mm
DC Input	5 V
Power Consumption	170 mA @ 5 V
Video Format	NTSC/480i & PAL/576i
Voltage Level	2 V _{pk=pk}

WARRANTY

Fully assembled versions of this product are covered by warranty for one year following the date of purchase. This warranty covers any defect in the manufacturing of this product, such as assembly errors or faulty components. This warranty does not cover any damage or malfunction caused by incorrect use, such as, but not limited to, power cables connected backwards, excessive voltage levels, or exposure to extreme temperature or moisture levels. The cost of returning a product for repair or replacement is paid for by the customer. DIY kits and bare printed circuit boards are not covered under any warranty and come with no guarantee of assembly troubleshooting or customer support.

Mismatcher 01 REV. D | Owner's Manual
Revision A April 2021
Written by Pedro Silva | Art by Seni
freedomenterprise.pt
help@freedomenterprise.pt
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Note: Specifications subject to change
without notice

