

VIDDY ROT MIXER

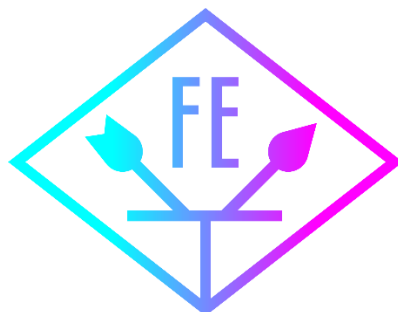
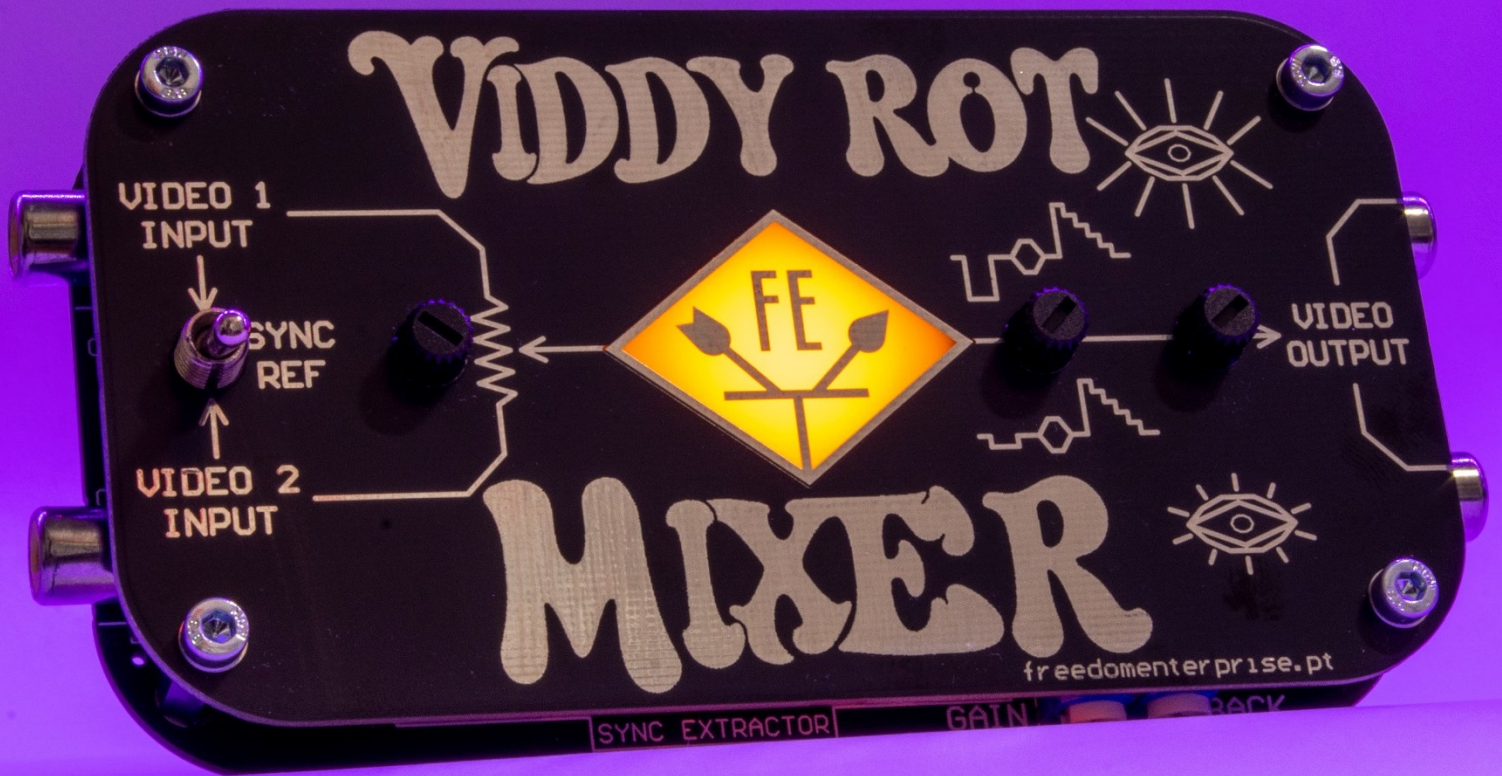
OWNER'S MANUAL

Revision C

For VRM-B REV.A

August 2024

Written by Pedro Silva

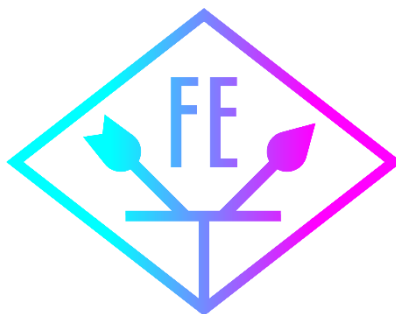


DISCLAIMER

This kit is not intended to be your first soldering kit. If you don't own a soldering station, don't know the difference between a NPN and PNP transistor or what is the polarity of a capacitor, please do not buy this kit. I offer a large selection of products assembled and ready to use that you can look into it.

I hope you understand that, for a kit at this price point and me being a single person running Freedom Enterprise, I can't give you the necessary assistance to assemble this kit if you're a novice. There are tons of sub-10\$ kits that can be purchased online where you can learn the basics of assembling and soldering kits before you try this one.

Thanks for understanding.
Pedro Silva

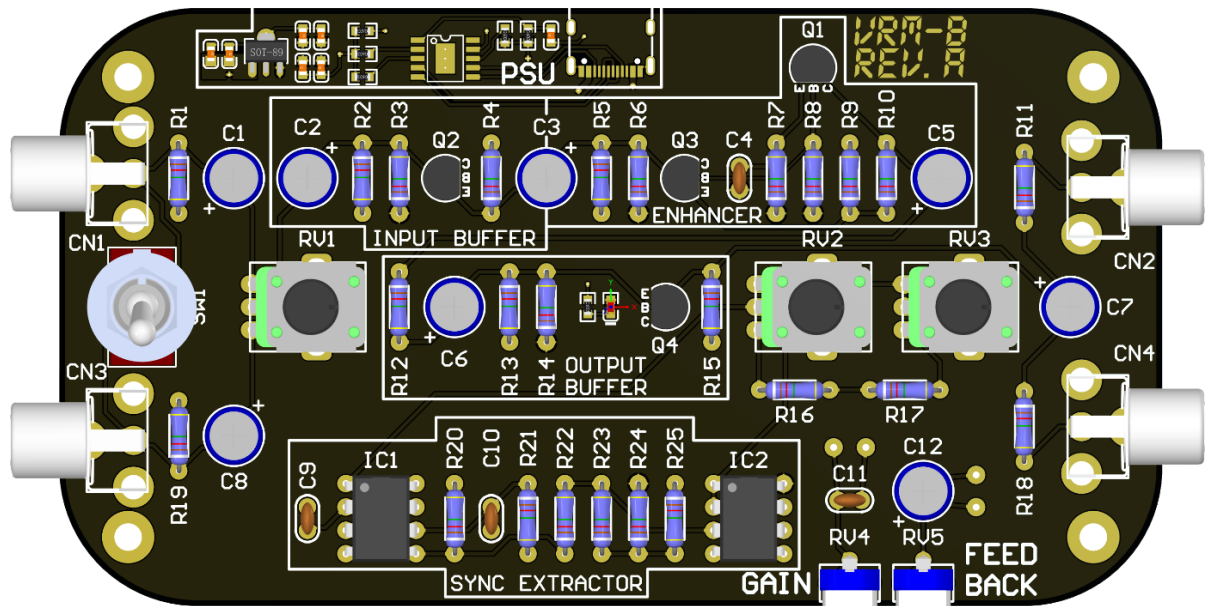


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Analog Audio and Video Effects

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VIDDY ROT MIXER



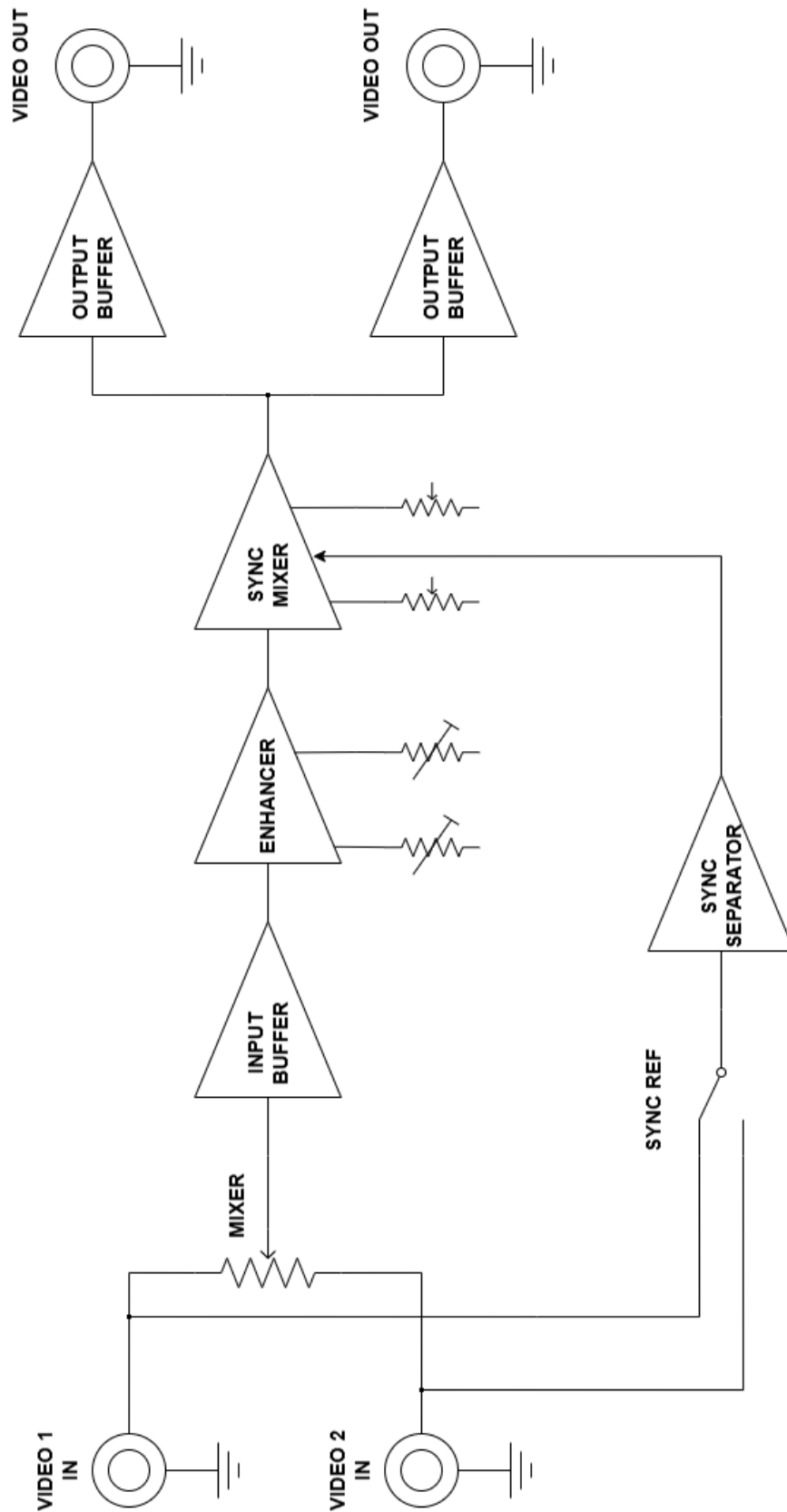
About

The Viddy Rot Mixer is an analog video effects unit, **powered through USB-C PD**, available as a soldering kit, that can take up to two composite video inputs and mix them into two independently buffered composite video outputs. When using two video inputs, you can blend them together using the mixer knob and re-sync the entire video output to one of the video inputs using the Sync Ref switch. Additional controls allow you to dial in the perfect blend of glitch and sync correction.

Specifications

DC Input	USB-C PD, 9 V
Power Consumption	xx mA @ 9 V
Video Format	PAL, NTSC & SECAM
I/O Voltage Level	1 V _{pk-pk} @ 75 Ω
Size	120x65 mm

Block Diagram



Bill of Materials

Qty	Description	Value	Reference
7	Electrolytic Capacitor *	220 μF	C1, C2, C3, C5, C6, C7, C8
2	Ceramic Capacitor *	100 nF	C9, C10
4	RCA Jack	n/a	CN1, CN2, CN3, CN4
1	Sync Striper	LM1881	IC1
1	OP-AMP *	TL082	IC2
1	PNP Transistor	2N3906	Q1
3	NPN Transistor	2N3904	Q2, Q3, Q4
6	Resistor 1/4 Watt *	75 Ω	R1, R11, R16, R17, R18, R19
5	Resistor 1/4 Watt *	5.6 $K\Omega$	R2, R3, R5, R13, R14
2	Resistor 1/4 Watt *	220 Ω	R4, R15
1	Resistor 1/4 Watt *	18 $K\Omega$	R6
2	Resistor 1/4 Watt *	330 Ω	R7, R9
2	Resistor 1/4 Watt *	680 Ω	R8, R10
1	Resistor 1/4 Watt *	100 Ω	R12
1	Resistor 1/4 Watt *	1 $K\Omega$	R20
1	Resistor 1/4 Watt *	680 $K\Omega$	R21
2	Resistor 1/4 Watt *	100 $K\Omega$	R23, R25
1	Resistor 1/4 Watt *	56 $K\Omega$	R24
1	RV09 Potentiometer	1 $K\Omega$	RV1
2	RV09 Potentiometer	10 $K\Omega$	RV2, RV3
2	RM063 Trimmer	1 $K\Omega$	RV4, RV5
1	SPDT Switch	n/a	SW1
1	Install the female pins and try values in the nano Farad range *	10 nF	C4
1	Install the female pins and try values in the nano Farad range *	1 nF	C11
1	Install the female pins and try values in the micro Farad range *	1 μF	C12
1	Check note bellow for installation details *	10 μF	R22

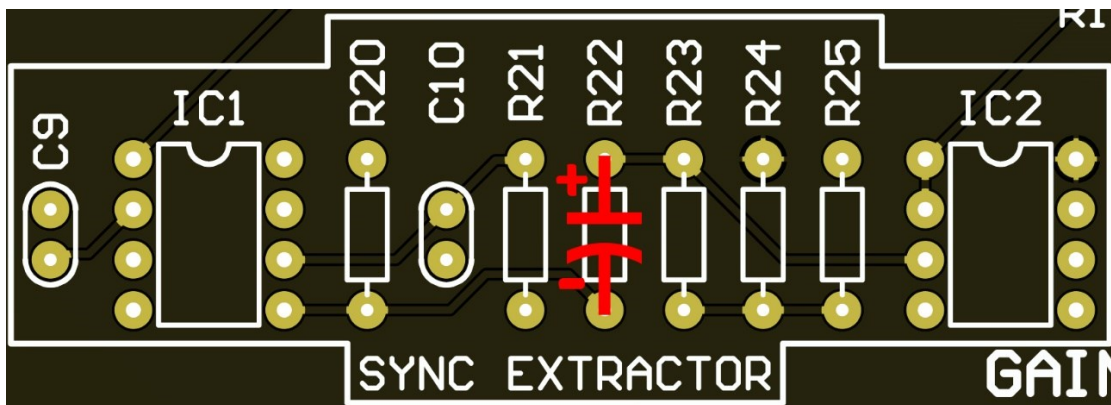
The Viddy Rot Mixer kit **DOESN'T INCLUDE ALL NECESSARY COMPONENTS**. The missing components are marked with an asterisk (*) in the BOM and can be easily sourced at your local electronic hobby store.

The resistors used in this design are $\frac{1}{4}$ Watt with a length of 6.5 mm.

Electrolytic capacitors are 6.3 mm in diameter, lead pitch of 2.54 mm and minimum rated voltage of 6.3 V.

Ceramic Capacitors have a lead pitch of 2.54mm.

R22 was replaced by a capacitor and should be installed with the polarity shown below:



Assembly

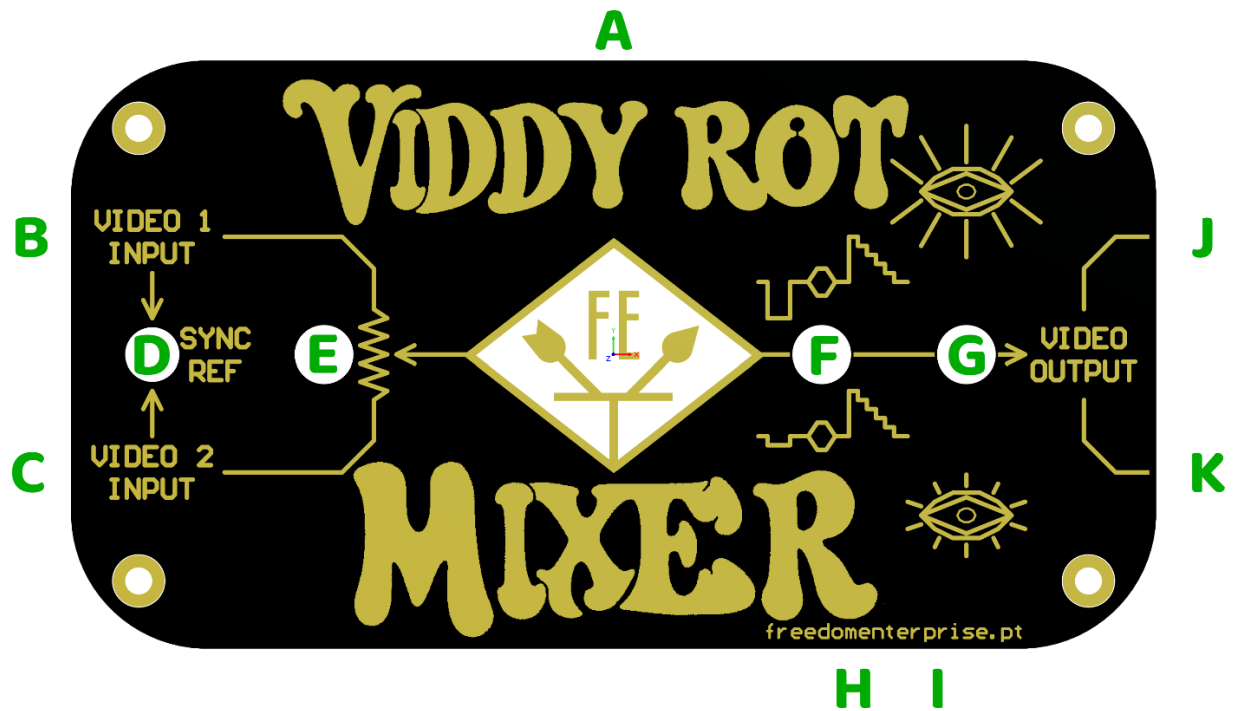
This kit only requires the soldering and assembly of THT parts. All SMD components are pre-assembled and soldered.

There is no specific order in which to assemble components. However, I do recommend you start by placing smaller components first (resistors -> ceramic capacitors -> transistors, etc) and gradually move to larger ones (ICs -> elect. capacitors -> RCA jacks, etc).

After soldering, you can clean off flux using a brush and isopropyl alcohol.

The assembly instructions are sparse because I assume you have experience assembling easy kits such as this one.

User Interface



A DC Input, USB-C **PD**

B Video 1 Input, 75 Ω Termination, RCA

C Video 2 Input, 75 Ω Termination, RCA

D Sync Reference Selector Switch

E Video 1 & 2 Mixer

F Sync Correction Amount

G Brightness Correction Amount

H Gain Trim

I Feedback Trim

J Video Output, 75 Ω Termination, RCA

K Video Output, 75 Ω Termination, RCA

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 (although I'll try help you out).

VRM-B REV. A | Owner's Manual

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Note: Specifications subject to change without notice

