

The Blender

Based on:

Earthquaker Devices Disaster Transport Sr. Delay

Effect type:

Split and blend

Build difficult:

Intermediate

Amount of parts:

Average, total 51 components

Technology:

Op amp

Power consumption:

9V

Enclosure type:

1590bb

Get your board at:

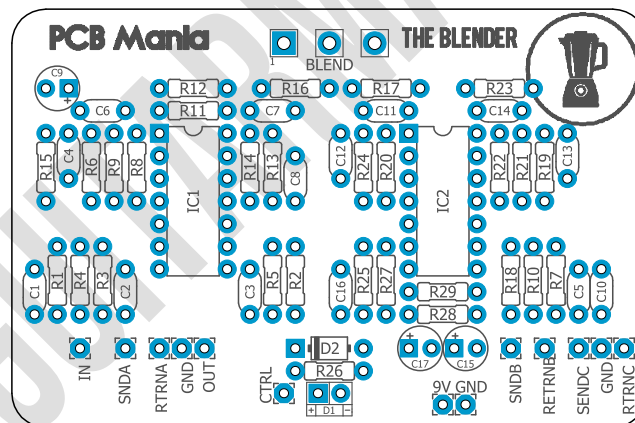
[The Blender](#)

Get your kit at:

[Das Musikding \(Europe\)](#)

Project overview:

The Blender is based on an original design called The Phantom Pain audio router. Which, in turn, used the audio pathway of Earthquaker Devices's Disaster Transport Sr. Delay pedal with a "modular" circuit that makes it possible to incorporate any three effects of your choice.



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Introduction

Let's see how this creative invention works:

Send/return A is always in parallel with send/return B. Send/return C is still in series with effect B.

The Blend knob lets effect A stay parallel with effects B and C, mixes the parallel A and B into effect C, or allows a combination of series and parallels.

The original author suggests that it might be worth trying to have **switching jacks** for send/return B and wire them up so that when there is nothing plugged into the jacks, the send goes directly to the return pad. Though he hasn't tested himself, it could be a good option if you feel like trying because this modification would create a standard series/parallel pedal with two effects.

If you plan to make this a standalone, modular pedal, you might need to use a 1590BB due to all the jacks you need (2 for each send/return and 2 for the in and out).

This build uses 1uf tantalum capacitors due to their smaller size. You can try regular film box capacitors, although your build might end up looking a bit messy.

Controls

- BLEND

Bill of materials

Resistors	
Part	Value
R1	1m
R2	100k
R3	100k
R4	100k
R5	100k
R6	1m
R7	1m
R8	100k
R9	100k
R10	100k
R11	15k
R12	15k
R13	15k
R14	100k
R15	10k
R16	15k
R17	100k
R18	100k
R19	1m
R20	100k
R21	100k
R22	100k

R23	100k
R24	100k
R25	1m
R26	4k7
R27	100k
R28	47k
R29	47k

Capacitors	
Part	Value
C1	47n
C2	1u
C3	1u
C4	47n
C5	1u
C6	1u
C7	1u
C8	1u
C10	1u
C11	1u
C12	1u
C13	47n
C14	1u
C16	1u

Electrolytics Capacitors	
Part	Value
C9	22u
C15	47u
C17	47u

Potentiometers	
Part	Value
BLEND	10k B

IC	
Part	Value
IC1	TL074
IC2	TL074

Diodes	
Part	Value
D1	LED.1
D2	1n4001

Shopping list

Resistors		
Qty	Value	Parts
1	4k7	R26
16	100k	R2, R3, R4, R5, R8, R9, R10, R14, R17, R18, R20, R21, R22, R23, R24, R27
1	10k	R15
4	15k	R11, R12, R13, R16
5	1m	R1, R6, R7, R19, R25
2	47k	R28, R29

Diodes		
Qty	Value	Parts
1	1n4001	D2
1	3mm LED	D1

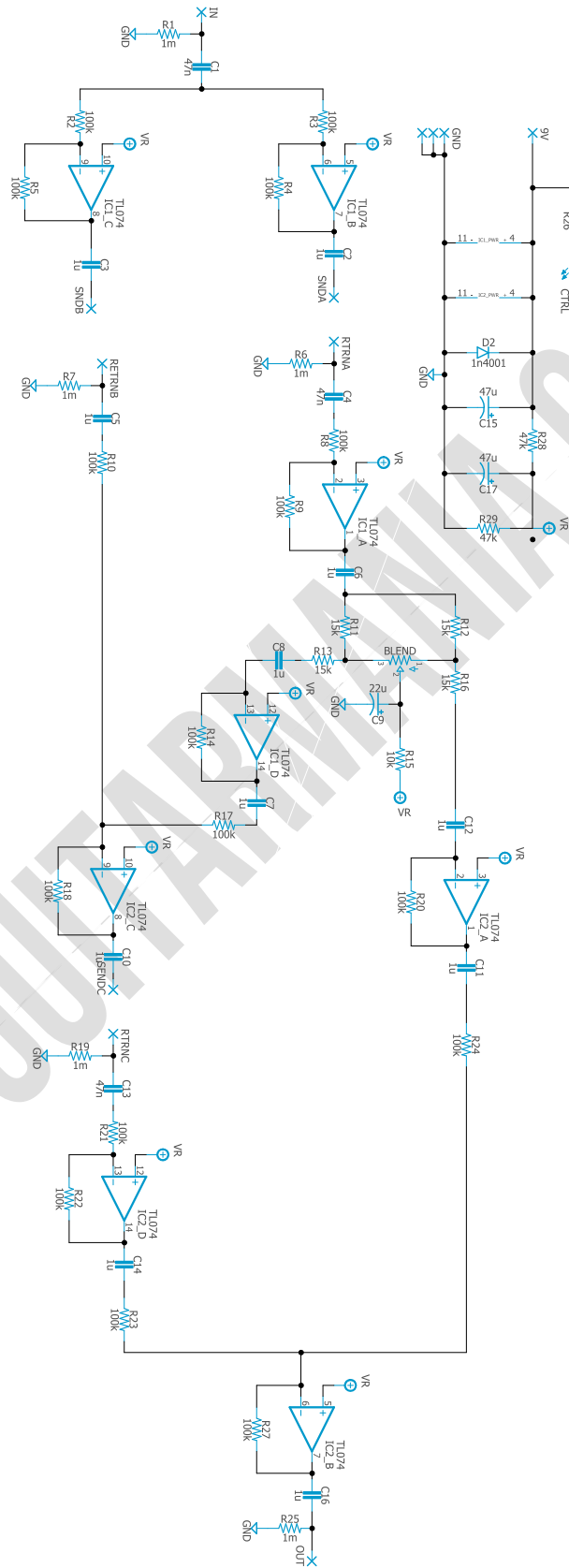
Electrolytics Capacitors		
Qty	Value	Parts
1	22u	C9
2	47u	C15, C17

Capacitors		
Qty	Value	Parts
11	1u	C2, C3, C5, C6, C7, C8, C10, C11, C12, C14, C16
3	47n	C1, C4, C13

Potentiometers		
Qty	Value	Parts
1	10k B	BLEND

IC		
Qty	Value	Parts
2	TL074	IC1, IC2

Schematic



Components Recommendations

As many people like to experiment with some pedals with higher voltage, always ensure your **electrolytic capacitors'** max tolerance is over 25v.

This board has been tested using Film box capacitors for most of the values over 1nf and ceramics discs for those under 1nf. However, high-quality components such as Wima's Capacitors and Panasonic's electrolytics can deliver a better performance.

All the resistors used for testing this project are 1/4W Metal Film.

The BOM and Shopping list are exclusive regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

Build Notes

If this is one of your first projects, I recommend you to take a look at our [Pedal Building Guide](#).

For a successful and tidy build, it's recommended the following order:

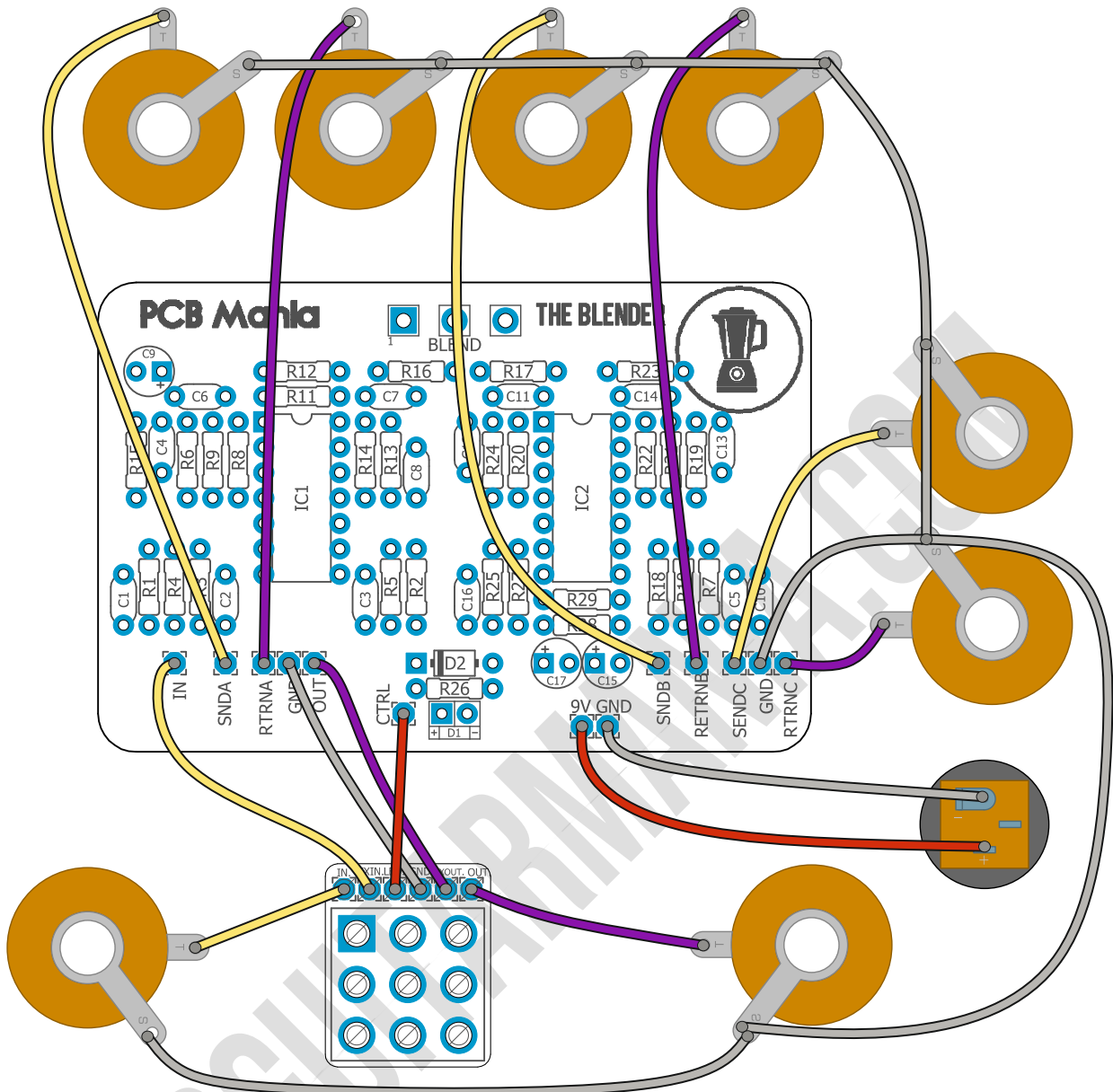
1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off-board wiring

Wiring Diagram

All our projects include a free 3PDT Board to make the wiring easier and tidier. Also, all of our PCBs feature the status LED on board.

The pad named "Ctrl" or "LED" is the one that controls the status of the led; wire it to the "LED" pad on the 3PDT board or in the control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB; check it [here](#) to access our [Pedal Wiring Guide](#).



Drill Template

This Project has been planned to fit into a 1590bb enclosure type.

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print on an A4 page.

Licensing and Usage

We really appreciate your trust and support in buying this PCB, as well as your will to dive into the DIY electronics world. For us, that's why you can make this project work properly and enjoy not only the building process but also experiment and play with it on your rig.

We try to reply to every question we receive on our email or our social media. Still, we try to encourage all our customers to join our [PCB Guitar Mania - Builders Group](#) on Facebook to post all your doubts, issues, suggestions, or requests, share your builds, and have some feedback from other fellow builders and us!

We tested all our projects following this same guide on their standard configurations. Although, not all of the variations and mods have necessarily been checked. These are suggestions based on the schematic analysis and the experiences and opinions of others. Feel free to share with us your views and recommendations regarding the mods your personal experimentation.

These boards may be used for commercial endeavors in any quantity unless expressly noted. No attribution is necessary, though accreditation or a link back is always much appreciated.

If you are a builder planning to make your own run of pedals, we also offer the service of custom-made boards with your brand and logo, design according to your specifications.

The only usage restrictions are that, first, you cannot resell the PCB as part of a kit without prior arrangement with us, and second, you cannot scratch off the silkscreen or other way of trying to hide our logos and the source of the PCBs. Like it's written above, if you want to have your designs with your brand and logo, we could undoubtedly reach an agreement.

Follow us on [Instagram](#) and [Facebook](#) to stay in tune with the latest projects!