

Clean Blend Master

Based on:

PCB Mania original design

Effect type:

Multi-task utility PCB

Build difficult:

Low

Number of parts:

Average, total 40 components

Technology:

Dual Op-Amps

Power consumption:

9V

Enclosure type:

125b

Get your board at:

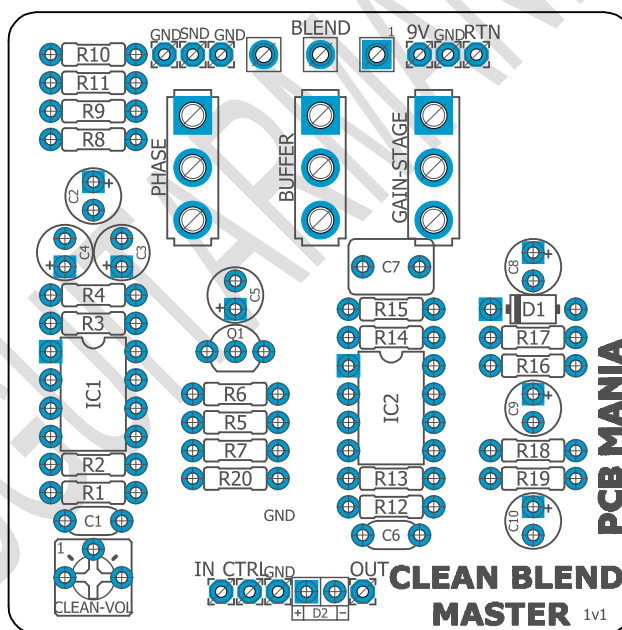
[Clean Blend Master](#)

Get your kit at:

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

Project overview:

The Clean Blend Master is a multi-task pedal that allows you to blend your instrument's unprocessed "clean" signal with any pedal you use. It also eliminates any unwanted phase cancellation in your chain, prevents signal loss, and adds that additional gain stage when needed. This is a must for any effects pedal setup.



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Introduction

Have you ever wanted to add a clean blend to your favorite dirt pedal? If you love thick and saturated fuzzes and distortions, for sure, you have felt your bass frequencies losing definition and presence, getting lost in the mud of the mix. This is the case with many classic distortion pedals such as The Rat, Muffs, Boss HM2, and most dirty fuzzes.

That's why we created the Clean Blend Master, a stand-alone board that helps you to mix up your dry signal with your dirty tone keeping your lower strings well defined through the mix.

To make this board the most versatile, we added three toggles that make it easier for you to craft your perfect tone.

First, you have an inverting phase stage to match any drive pedal.

At the return of the dirty signal, we added a buffer switch to give extra power to your dirty signal.

Last but not least, you have an additional gain stage to slightly boost your overall signal blend.

We developed this tool to make the [custom PCB design](#) easier, and now you can experiment and design your own pedal by adding this to your favorite dirty pedal.

And remember, once you have a clear idea of your ideal guitar pedal, you can order custom PCBs for your run of pedals [right here](#).

Controls

Potentiometers

- Blend

Switches

- Phase
- Buffer
- Gain-stage

Bill of materials

Resistors	
Part	Value
R1	1m
R2	1m
R3	10k
R4	10k
R5	510K
R6	10K
R7	100R
R8	15K
R9	15K
R10	15K
R11	15K
R12	50K
R13	3K6
R14	10K
R15	100R
R16	10k
R17	10k
R18	10k
R19	10k
R20	47k

Capacitors	
Part	Value
C1	100n
C6	100p
C7	1u

Electrolytics Capacitors	
Part	Value
C2	10u
C3	10u
C4	10u
C5	10u
C8	47u
C9	100u

C10	22u
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Potentiometers	
Part	Value
BLEND	B10K

IC	
Part	Value
IC1	TL072
IC2	NE5532

Trimmer	
Part	Value
CLEAN-VOL*	100k

Transistors	
Part	Value
Q1	2N3904

Switches	
Part	Value
PHASE	SPDT - ON-ON
BUFFER	SPDT - ON-ON
GAIN-STAGE	SPDT - ON-ON

Diodes	
Part	Value
D1	1n5817
D2	3mm red LED

Shopping list

Resistors		
Qty	Value	Parts
2	100R	R7, R15
8	10k	R3, R4, R6, R14, R16, R17, R18, R19
4	15K	R8, R9, R10, R11
2	1m	R1, R2
1	3K6	R13
1	47k	R20
1	50K	R12
1	510K	R5

Capacitors		
Qty	Value	Parts
1	100n	C1
1	100p	C6
1	1u	C7

Electrolytics Capacitors		
Qty	Value	Parts
1	100u	C9
4	10u	C2, C3, C4, C5
1	22u	C10
1	47u	C8

Potentiometers		
Qty	Value	Parts
1	B10K	BLEND

IC		
Qty	Value	Parts
1	TL072	IC1
1	NE5532	IC2

Trimmer		
Qty	Value	Parts
1	100k	CLEAN-VOL*

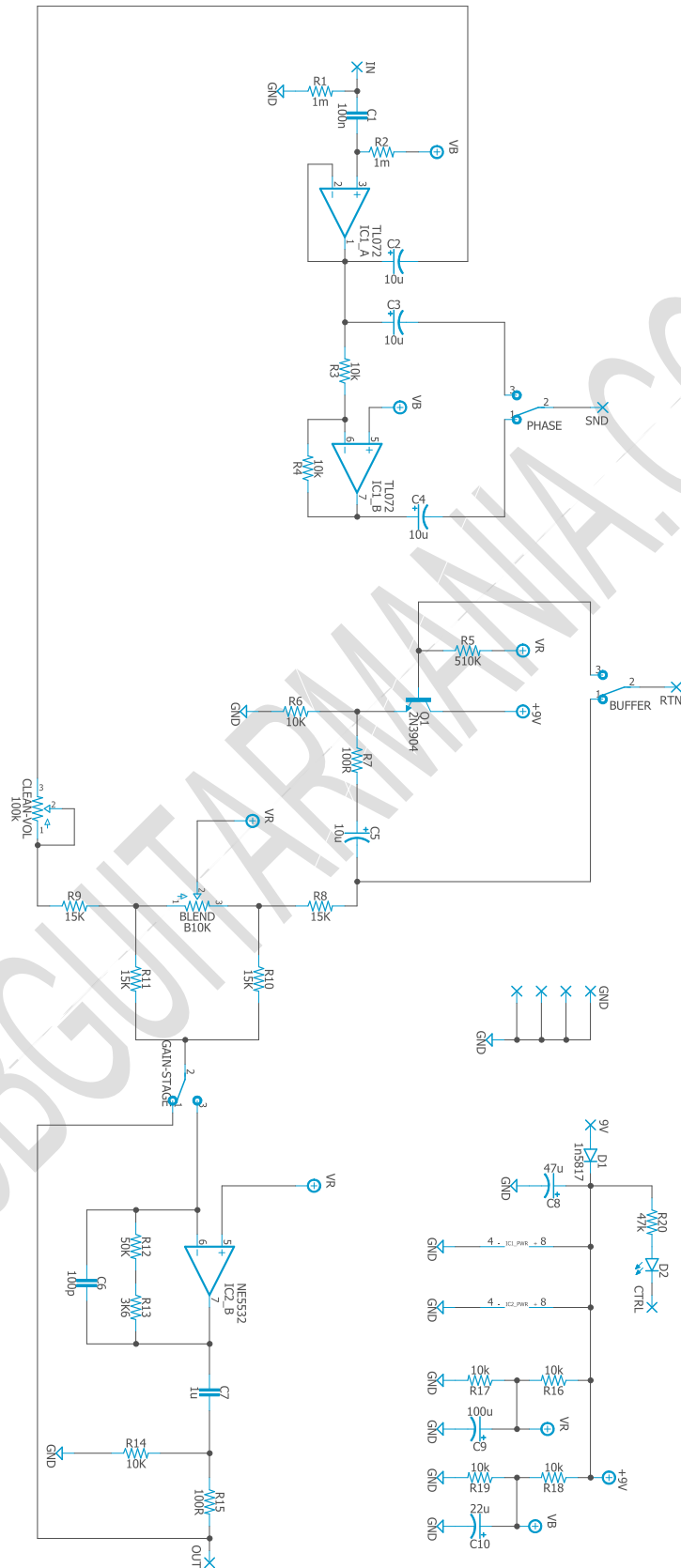
Transistors		
Qty	Value	Parts
1	2N3904	Q1

Switches		
Qty	Value	Parts
3	SPDT - ON-ON	PHASE, BUFFER, GAIN-STAGE
1	3PDT Stomp foot	-

Diodes		
Qty	Value	Parts
1	1n5817	D1
1	3mm red LED	D2

Jacks		
Qty	Value	Parts
1	DC JACK	-
2	AUDIO JACK	-

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

CLEAN-VOL*

From 1v1 onwards, we added a trimmer that allows you to adjust the level of the clean signal.

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 125b 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!