

Whiteboard

Based on:

Jext Telez White Pedal

Effect type:

Fuzz - Overdrive

Build difficult:

Average

Amount of parts:

Average, total 54 components

Technology:

NPN & PNP Silicon transistors +
Wah wah inductor

Power consumption:

9V

Enclosure type:

125b

Get your board at:

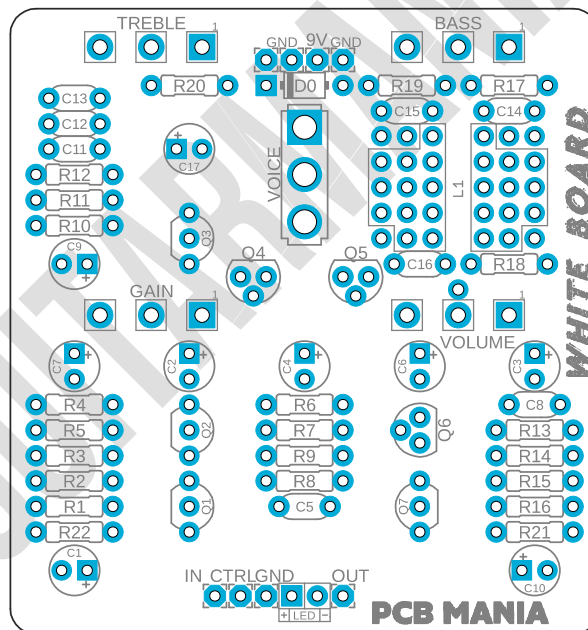
[Whiteboard](#)

Get your kit at:

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

Project overview:

Inspired by Jext Telez White Pedal. Designed to bring back those legendary overdrive and fuzz sounds of the late 60s commonly associated with George Harrison's Vox amplifier.



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Introduction

Let's gather around the Whiteboard and write some tunes!

It is based on the Vox Conqueror amp topology that was the secret weapon of bands like The Beatles and Rolling Stones when they were recording their biggest hits. When the market is filled with all sorts of pedals that you might not be sure about, you know you can at least trust the sound that sold millions of albums worldwide and made probably the same amount of girls faint.

The pedal allows you to dial in the perfect sound with minimum effort. There are only 4 knobs (VOLUME, GAIN, BASS and TREBLE) and 1 switch (VOICE) between you and the tone you're after. The VOLUME potentiometer gives you control over how loud the pedal is - from 0 signal, through 'unity gain', to pushing the amp to its limits - it's all up to you. With the GAIN control, you can roll between a slight, sweet overdrive and crazy, wild fuzz that will make you check if your speaker is all in one piece. The EQ section is divided into BASS and TREBLE potentiometers, so you can precisely tune your tone to your liking. Just to make things more interesting, the pedal also offers a VOICE switch. With this control, you can select 1 of 3 mid-range frequencies that you want to boost, giving your tone a unique flavor.

With all that said, we already feel like we're back in the USSR (sonically, that is). Join us there!

Controls

- BASS
- GAIN
- TREBLE
- VOLUME

Bill of materials

Resistors	
Part	Value
R1	100k
R2	220k
R3	18k
R4	22k
R5	20k
R6	470r
R7	330r
R8	1k
R9	10k
R10	18k
R11	10k
R12	15k
R13	1k5
R14	2k2
R15	4k7
R16	47k
R17	220r
R18	220r
R19	10k
R20	220r
R21	4k7
R22	1m

Capacitors	
Part	Value
C5	68n
C8	100n
C11	47n
C12	47n
C13	150n
C14	100n
C15	10n
C16	220n

Electrolytics Capacitors	
Part	Value
C1	10u
C2	10u
C3	47u
C4	47u
C6	10u
C7	47u
C9	10u
C10	220u
C17	470u

Potentiometers	
Part	Value
BASS	10k A
GAIN	5k C
TREBLE	1k B
VOLUME	25k A

Inductors	
Part	Value
L1	Inductor 500mH (Fasel)*

Transistors	
Part	Value
Q1	BC548**
Q2	BC548**
Q3	BC548**
Q4	2N4125***
Q5	2N4125***
Q6	2N4125***
Q7	BC548**

Switch	
Part	Value
VOICE	SPDT ON/OFF/ON

Diodes	
Part	Value
D0	1n5817
LED	3mm Red LED

Shopping list

Resistors		
Qty	Value	Parts
1	100k	R1
3	10k	R9, R11, R19
1	15k	R12
2	18k	R3, R10
1	1k	R8
1	1k5	R13
1	1m	R22
1	20k	R5
1	220k	R2
3	220r	R17, R18, R20
1	22k	R4
1	2k2	R14
1	330r	R7
1	470r	R6
1	47k	R16
2	4k7	R15, R21

Capacitors		
Qty	Value	Parts
2	100n	C8, C14
1	10n	C15
1	150n	C13
1	220n	C16
2	47n	C11, C12
1	68n	C5

Electrolytics Capacitors		
Qty	Value	Parts
4	10u	C1, C2, C6, C9
1	220u	C10
1	470u	C17
3	47u	C3, C4, C7

Potentiometers			
Qty		Value	Parts
	1	10k A	BASS
	1	1k B	TREBLE
	1	25k A	VOLUME
	1	5k C	GAIN

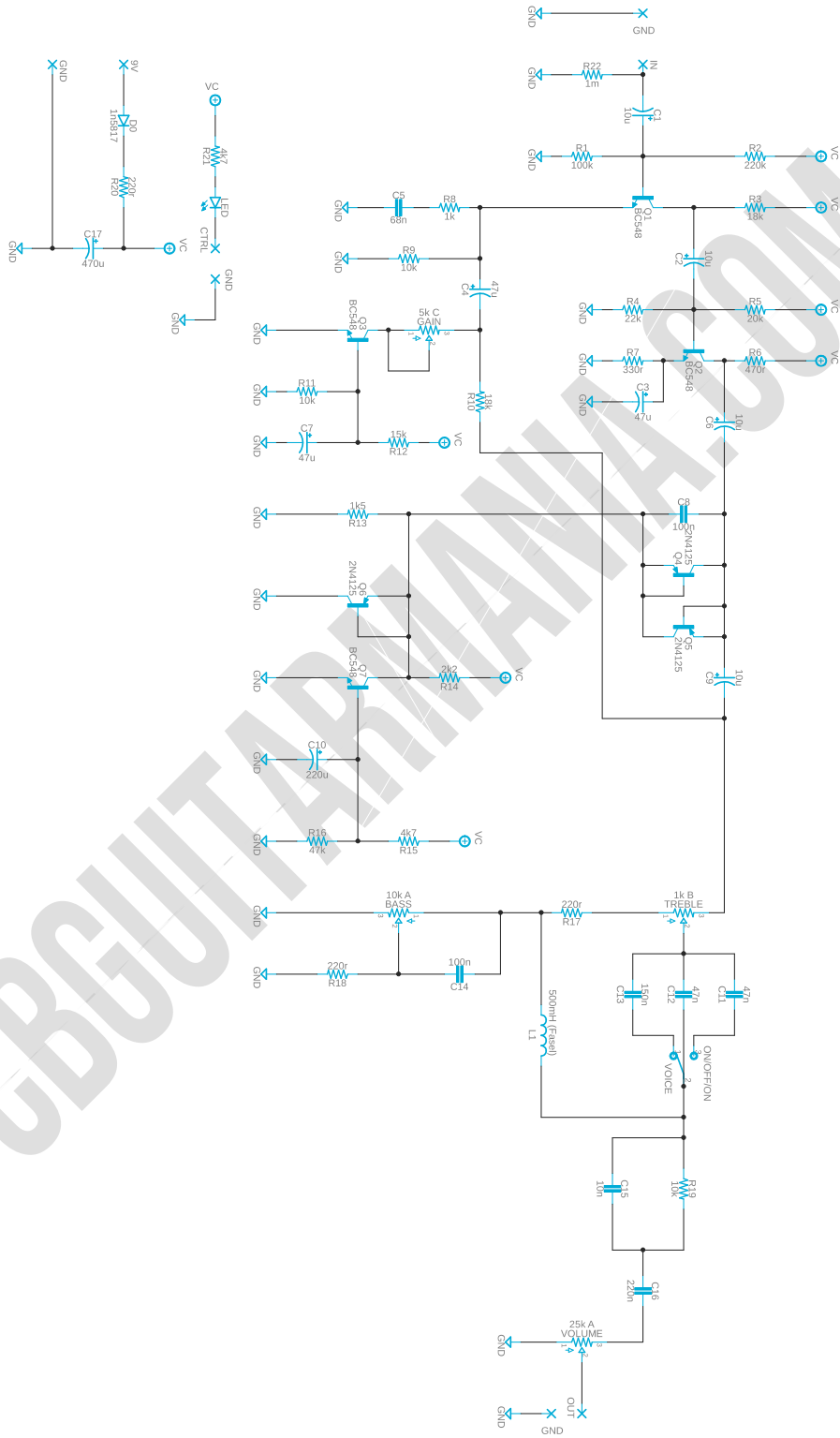
Switches		
Qty	Value	Parts
1	SPDT ON/OFF/ON	VOICE

Transistors		
Qty	Value	Parts
3	2N4125***	Q4, Q5, Q6
4	BC548**	Q1, Q2, Q3, Q7

Inductors		
Qty	Value	Parts
1	Inductor 500mH (Fasel)*	L1

Diodes		
Qty	Value	Parts
1	1n5817	D0

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.

Inductor 500mH (Fasel)* We tested our prototype with the following Inductor with great results.

<https://www.musikding.de/Dunlop-Fasel-Wah-inductor-rot>

<http://www.smallbear-electronics.mybigcommerce.com/wah-inductor-dunlop-fasel-re-issue-toroidal-cup-core/>

Below you can see how to fit properly the inductor on board

BC548** NPN Silicon transistor. you can also try 2n3904 or 2n5087 flipped 180 degrees.

2N4125*** PNP Silicon transistor. You can use 2n5087 as a direct replacement.

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 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.

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