

Absolute Distortion

Based on:
Wampler Sovereign™
Effect type:
High Gain Drive
Build difficult:
Average/Advanced

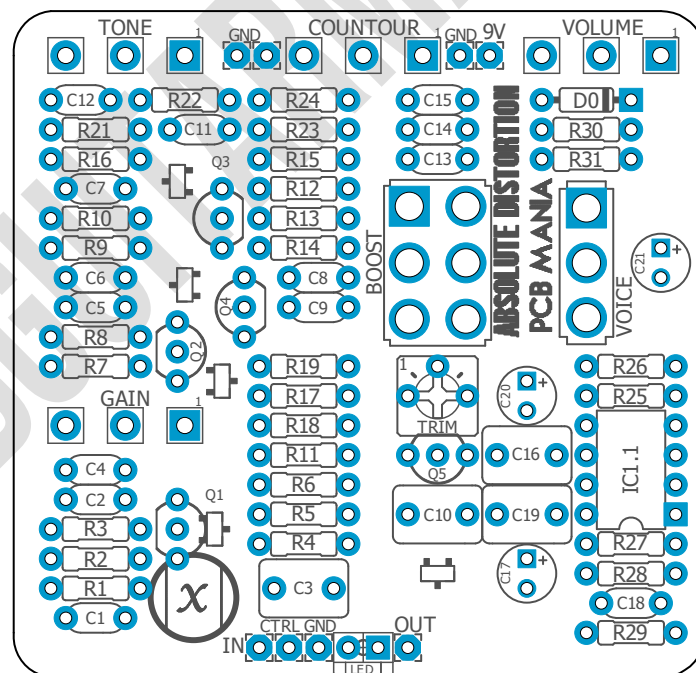
Amount of parts:
High, total 67 components
Technology:
JFET mu-amp + Op Amp power stage
Power consumption:
9mA (9v) and 17mA (18v)

Enclosure type:
125b
Get your board at:
[Absolute Distortion](#)
Get your kit at:
[Das Musikding \(Europe\)](#)

Project overview:

Based on Wampler Sovereign, this circuit is a versatile beast, plenty of gain and full of harmonic overtones, always sounding organic and big. Surprisingly shapeable and responsive, the non-traditional gain and EQ controls allow you to tune the pedal to suit any setup, and instead of just emphasizing a certain frequency range, they actually change the texture of the gain.

Beside the traditional Volume, Gain and Tone, this board features a very handy Contour control as well as two toggles on-board, Voice selects in between vintage and Modern, and a Boost switch to give your drive an extra push.



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Introduction

Do I have to say more than it's based on the Wampler Sovereign™? With very minor changes in the circuit and the either T0-92 or SMD pads for easy sourcing the parts or to avoid soldering SMDs just how you prefer to do it. Also the Layout of the PCB allows top mounted jacks. Other than that, Brian (like always) didn't leave much open where I could find something to tweak and make it better.

Just like the Original Pedal it comes with Volume, Gain, Tone and a very well thought Mid Contour knob to shape from everywhere in between rocking vintage Overdrive to high Gain.

The EQ section, which is based on the Big Muff Tone stack with contour mod, has a very wide range like all his pedals have to give you the control you are looking for and like this wasn't enough it reacts very well with the Volume Knob of our guitar.

The internal trimmer controls how much voltage is feed into Q5, dial it by ear till you find the sweet spot you like, but remember lower voltages will give you a dirtier sound with lower output, while higher voltages will add more headroom and clarity on it.

Highly recommended to give this a go.

Controls

- Gain
- Volume
- Tone
- Contour
- Boost switch
- Voice switch

Bill of materials

Resistors	
Part	Value
R1	1K
R2	1M
R3	1M
R4	10K
R5	1K
R6	1M
R7	1M
R8	1M
R9	1M
R10	220K
R11	4K7
R12	15K
R13	1K
R14	1M
R15	1M
R16	1M
R17	47K
R18	100K
R19	2K2
R21	33K
R22	68K
R23	10K
R24	10K
R25	47k
R26	1M
R27	33K
R28	100K
R29	10K
R30	10K
R31	10K

Capacitors	
Part	Value
C1	680p
C2	47n
C3	1u
C4	56n
C5	22n
C6	51p
C7	220p
C8	220n
C9	22n
C10	1u
C11	10n
C12	10n
C13	4N7
C14	33n
C15	3n3
C16	1u
C17	10u electro
C18	51p
C19	1u
C20	220u electro
C21	100u electro

Potentiometers	
Part	Value
COUNTOUR	A50K
GAIN	A500K
TONE	B100K
VOLUME	A100K
TRIM	50k trimmer

Semiconductors	
Part	Value
Q1	J201
Q2	J201
Q3	J201
Q4	J201
Q5	J201
D0	1N5817
IC1.1	JRC4580D
LED	Led 3mm

Switches	
Part	Value
VOICE	SPDT ON-ON
BOOST	DPDT ON-ON

Shopping list

Resistors		
Qty	Value	Parts
1	220K	R10
1	4K7	R11
1	15K	R12
1	47K	R17
1	2K2	R19
1	68K	R22
1	47k	R25
2	100K	R18, R28
2	33K	R21, R27
3	1K	R1, R5, R13
6	10K	R4, R23, R24, R29, R30, R31
10	1M	R2, R3, R6, R7, R8, R9, R14, R15, R16, R26

Potentiometers		
Qty	Value	Parts
1	A50K	COUNTOUR
1	A500K	GAIN
1	B100K	TONE
1	A100K	VOLUME
1	50k	TRIM

Semiconductors		
Qty	Value	Parts
1	LED.1	LED
1	JRC4580D	IC1.1
1	1N5817	D0
5	J201	Q1, Q2, Q3, Q4, Q5

Capacitors		
Qty	Value	Parts
1	680p	C1
1	4N7	C13
1	33n	C14
1	3n3	C15
1	10u electro	C17
1	47n	C2
1	220u electro	C20
1	100u electro	C21
1	56n	C4
1	220p	C7
1	220n	C8
2	10n	C11, C12
2	22n	C5, C9
2	51p	C6, C18
4	1u	C3, C10, C16, C19

Switches		
Qty	Value	Parts
1	DPDT ON-ON	BOOST
1	SPDT ON-ON	VOICE

Components Recommendations

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

This board has been tested using Film box capacitors for most of the values over 1nf, and ceramics discs for the ones 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 exclusively regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

The Transistors JFET J201 are the heart of this build. Make sure to get high quality ones from trusted vendors and not cheap Asian counterfeits! I strongly recommend the use of SMD transistors as they are much more reliable quality wise.

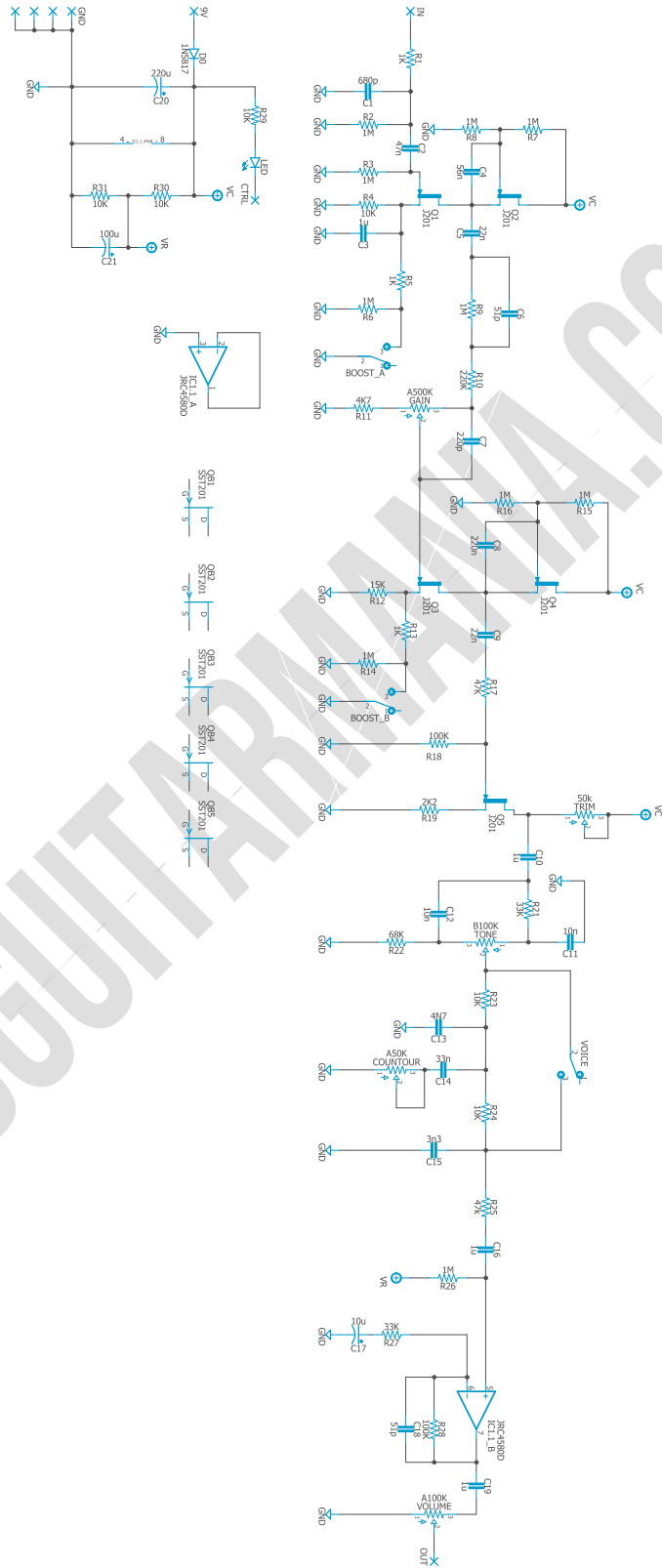
Build Notes

If this is one of your first projects I recommend you to take a look on 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

Schematic



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 control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB check it [here](#) to access to 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 in an A4 page.

Licensing and Usage

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

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

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

These boards may be used for commercial endeavors in any quantity unless specifically noted. No attribution is necessary, though accreditation or a link back is always greatly 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 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 silk screen, 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 own designs, with your brand and logo we could certainly reach an agreement.

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

Images

