

Freeman Supreme

Based on:

Friedman BE-OD
Friedman Dirty Shirley

Effect type:

Dual Channel High gain overdrive

Build difficult:

Advanced

Amount of parts:

High, total 84 components

Technology:

Jfet Buffer + pickup simulator in front of a fuzz Silicon Fuzz face

Power consumption:

9V(22mA)

Enclosure type:

1590bb

Get your board at:

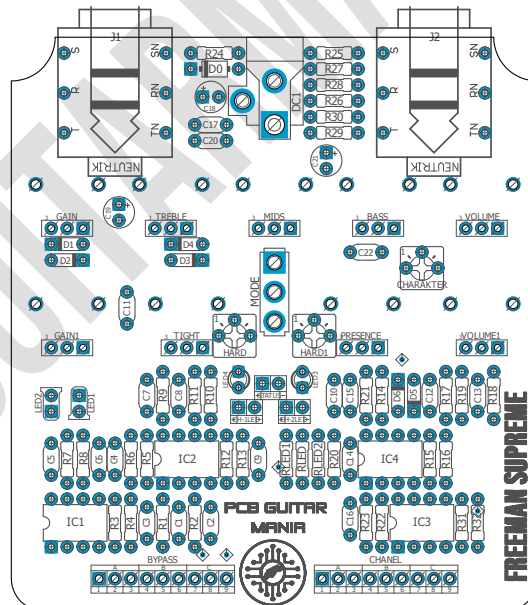
[Freeman Supreme](#)

Get your kit at:

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

Project overview:

The Freeman Supreme is our own custom model inspired in both [Friedman BE-OD](#) and [Friedman's Dirty Shirley](#)! This circuit has been designed to have the ultimate classic fuzz tone with a big low end, a biting top end without being too harsh.



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Introduction

The perfect fuzz! According to the people from EQD at Akron, Ohio. Inspired on the classic fuzz face face featuring an input buffer and a pickup emulator (transformer).

For this project we have included an internal volume trimpot as well as an additional Bias to have more control on the main Bias control outside the box.

Featuring:

- Dual-channel with independent Gain and Volume control
- Two foot-switches, for Channel select and Bypass
- Specially design dual 3pdt board to keep the wiring neat and tidy!
- Three-band EQ controls Bass, Mids, and Treble.
- Tight and presence control to have a precise control of your tone!
- Character Toggle, this switch allows you to select in between two different gain presets of your choice! You can configure it on your own way thanks to a couple of internal trim-pots!

This dual Channel behemoth combines the best of each Freeman Release

- 9 pots
- 2 Footswitches
- 1 toggle
- 3 trimpots
- 0 Wires

Controls

Potentiometers

- BASS
- GAIN
- GAIN1
- MIDS
- PRESENCE
- TIGHT

- TREBLE
- VOLUME
- VOLUME1

Switches

- MODE

Bill of materials

Resistors	
Part	Value
R1	2M2
R2	330K
R3	22K
R4	39K
R5	10K
R6	4K7
R7	22k
R8	22K
R9	22K
R10	220K
R11	22K
R12	27K
R13	10K
R14	2K2
R15	33K
R16	33K
R17	2K2
R18	470K
R19	2K2
R20	2k2
R21	22K
R22	100K
R23	2K2
R24	10R
R25	20K
R26	22K
R27	2k2
R28	20K
R29	22K
R30	2k2
R31	2K2
R32	2K2
RLED	2k7
RLED1	2k7
RLED2	2k7

Capacitors	
Part	Value
C1	22n
C2	47pF
C3	10n
C4	1n
C5	47pF
C6	100n
C7	47n
C8	120pF
C9	220pF
C10	10n
C11	4n7
C12	22n
C13	220n
C14	2n2
C15	10n
C16	220n
C17	100n
C20	100n
C22	100n

Electrolytics Capacitors	
Part	Value
C18	100uf
C19	22uf
C21	22uf

Potentiometers	
Part	Value
BASS	c100K
GAIN	a1M
GAIN1	a1M
MIDS	c100K
PRESENCE	c10k
TIGHT	c100K
TREBLE	b100K

VOLUME	a50K
VOLUME1	a50K

Trim pots	
Part	Value
CHARAKTER	100k
HARD	100k
HARD1	100k

IC	
Part	Value
IC1	TL072
IC2	TL072
IC3	TL072
IC4	TL072

Switches	
Part	Value
Mode	Sptd on-on

Diodes	
Part	Value
D0	1N5817
D1	1n4148
D2	1n4148
D3	1n4148
D4	1n4148
D5	1n4148
D6	1n4148
CH-1LED	5mm Blue LED
CH-2LED	5MM Green LED
STATUS	5mm RED LED

Shopping list

Resistors		
Qty	Value	Parts
3	2k7	RLED, RLED1, RLED2
1	100K	R22
2	10K	R5, R13
1	10R	R24
1	2M2	R1
2	20K	R25, R28
1	220K	R10
7	22K	R3, R8, R9, R11, R21, R26, R29
1	22k	R7
1	27K	R12
6	2K2	R14, R17, R19, R23, R31, R32
3	2k2	R20, R27, R30
1	330K	R2
2	33K	R15, R16
1	39K	R4
1	470K	R18
1	4K7	R6

Capacitors		
Qty	Value	Parts
4	100n	C6, C17, C20, C22
3	10n	C3, C10, C15
1	120pF	C8
1	1n	C4
2	220n	C13, C16
1	220pF	C9
2	22n	C1, C12
1	2n2	C14
1	47n	C7
2	47pF	C2, C5
1	4n7	C11

Electrolytics Capacitors		
Qty	Value	Parts
1	100uf	C18
2	22uf	C19, C21

Potentiometers		
Qty	Value	Parts
2	a1M	GAIN, GAIN1
2	a50K	VOLUME, VOLUME1
1	b100K	TREBLE
3	c100K	BASS, MIDS, TIGHT
1	c10k	PRESENCE

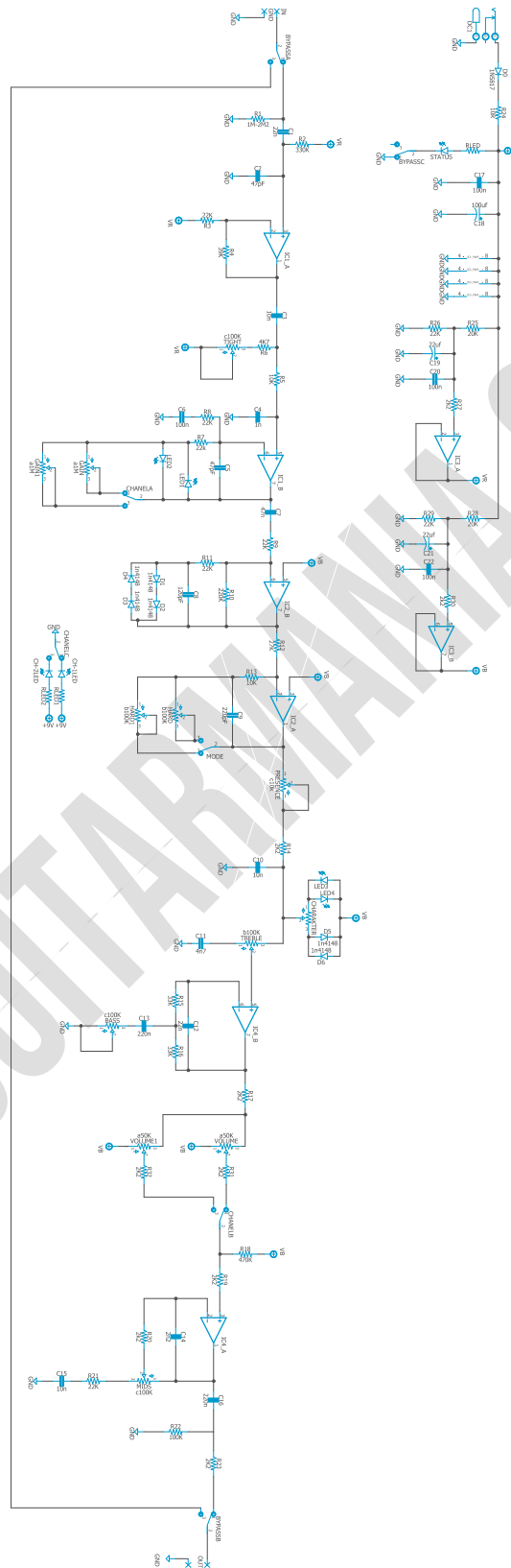
Trim pots		
Qty	Value	Parts
3	100K	HARD, HARD1, CHARAKTER

IC		
Qty	Value	Parts
4	TL072	IC1, IC2, IC3, IC4

Switches		
Qty	Value	Parts
1	SPDT ON-ON	MODE

Diodes		
Qty	Value	Parts
1	1N5817	D0
6	1n4148	D1, D2, D3, D4, D5, D6
4	3mm red led	LED1, LED2, LED3, LED4
1	5mm Blue LED	CH-1LED,
1	5MM Green LED	CH-2LED
1	5mm RED LED	STATUS

Schematic



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.

[This project uses 9mm on board pots, Mounted DC jack and mounted closed jacks.](#)

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.

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