

# Pleximan

## Based on:

Carl Martin – Original PlexiTone

## Effect type:

Overdrive

## Build difficult:

Intermediate

## Amount of parts:

Average, total 55 components

## Technology:

Dual Op Amp

## Power consumption:

9V

## Enclosure type:

1590bb

## Get your board at:

[Pleximan](#)

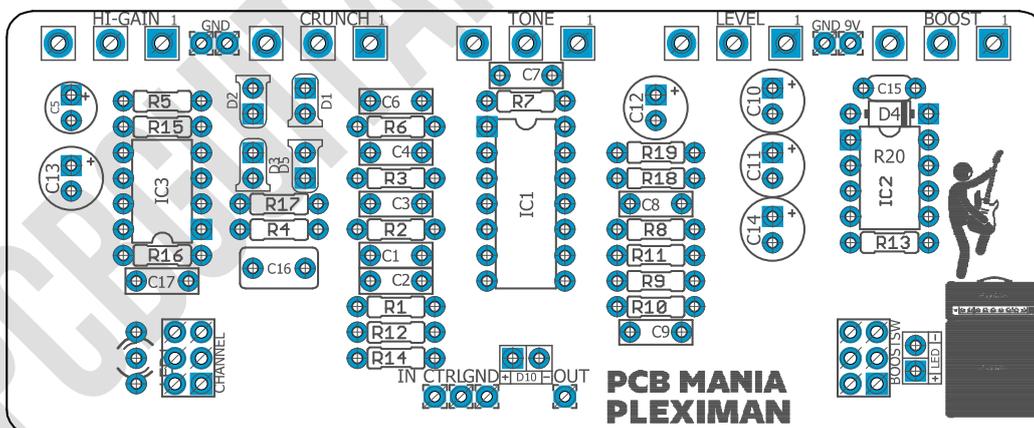
## Get your kit at:

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

## Project overview:

Inspired by Carl Martin's original PlexiTone, this is probably the most Plexi-sounding pedal you will ever hear. Marshall Matters!

No one can deny the impact of the Marshall sound on the music we've been listening to throughout the years. It is so powerful that even non-guitarists started to incorporate these amps in their signal chain to add its character to their tone. You can't really blame them, because the added value is undeniable. So what's even better than a legendary sounding amp? The same sound, but captured in a device that fits in the palm of your hand and won't break your back or buck.



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## Introduction

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The Pleximan is a circuit based on a genial plexi-in-a-box design from Carl Martin, but with few improvements. First off - the size. We managed to squeeze all the goodness into a compact board that you will be able to house in a 1590bb enclosure. Apart from that, we replaced the internal transformer with a charge pump. This allows the pedal to run on 18v from a 9v power source, which provides you with more headroom in your tone. To make things even more interesting, we made it possible for you to make your own version of this legendary unit that will include an extended tone stack. You thought that's it? No way! Our version has replaced the original's buffered bypass with a true bypass, so you don't need to worry about your clean signal being affected by the pedal when you're not using it. With all that out of the way, let's have a look at what the pedal has to offer in terms of controls.

This ultimate Marshall unit includes switchable boost, as well as a channel selector for your crunch and hi-gain needs. The Pleximan comes with 5 potentiometers - HI-GAIN, CRUNCH, TONE, LEVEL and BOOST. The HI-GAIN and CRUNCH knobs let you dial in the desired amount of saturation for their correlating channels. The TONE control is just what you'd expect from its name - it lets you shape the tone of your distorted signal to your liking. With the LEVEL pot you are able to set the overall volume of the output of the effect unit. There is also the BOOST control which allows you to control the switchable boost when you need to cut through the mix during the solo you've waited the whole night to play.

With all the above said, what are you waiting for? Get that Plexi, man!

## Controls

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### Potentiometers

- Boost
- Crunch
- Level
- Tone
- Hi-gain

- Boostsw Footswitch
- Channel Footswitch

### Switches

- Boostsw
- Channel

# Bill of materials

Resistors	
Part	Value
R1	1k
R2	1m
R3	47k
R4	2k
R5	47r
R6	22k
R7	22k
R8	47k
R9	22k
R10	100r
R11	1k
R12	4k7
R13	4k7
R14	4k7
R15	1m
R16	20k
R17	1m
R18	10k
R19	10k
R20	jumper

Capacitors	
Part	Value
C1	220n
C2	330pF
C3	33n
C4	330pF
C5	2u2

C6	470n
C7	68n
C8	470n
C9	220pF
C10	100u
C11	10uF
C12	10uF
C13	1uF
C14	10uF
C15	100n
C16	470n
C17	100n

Electrolytic Capacitors	
Part	Value
C5	2u2
C10	100u
C11	10u
C12	10u
C13	1u
C14	10u

Potentiometers	
Part	Value
BOOST	50k B
CRUNCH	100k A
LEVEL	5k A
TONE	5k B
HI-GAIN	1m A

Switches	
Part	Value
BOOSTSW	DPDT FOOTSWITCH
CHANNEL	DPDT FOOTSWITCH

IC	
Part	Value
IC1	LF347
IC2	TC1044SCPA
IC3	TL072

Diodes	
Part	Value
D1	3mm red LED
D2	3mm red LED
D3	3mm red LED
D4	1N5817
D5	3mm red LED/Jumper
D10	3mm red LED
LED	3mm red LED
LED1	BI COLOR LED common cathode

# Shopping list

Resistors		
Qty	Value	Parts
1	1k	R1, R11
4	1m	R2, R15, R17
3	47k	R3, R8
4	2k	R4,
1	47r	R5,
2	22k	R6, R7, R9
1	100r	R10
3	4k7	R12, R13, R14
1	20k	R16
2	10k	R18, R19
1	jumper	R20

Capacitors		
Qty	Value	Parts
1	220n	C1
2	330pF	C2, C4
1	33n	C3
1	2u2	C5
2	470n	C6, C8
1	68n	C7
1	220pF	C9
3	100n	C10, C15, C17
3	10uF	C11, C12, C14
1	1uF	C13
1	470n	C16

Electrolytic Capacitors		
Qty	Value	Parts
1	2u2	C5
1	100u	C10
3	10u	C11, C12, C14
1	1u	C13

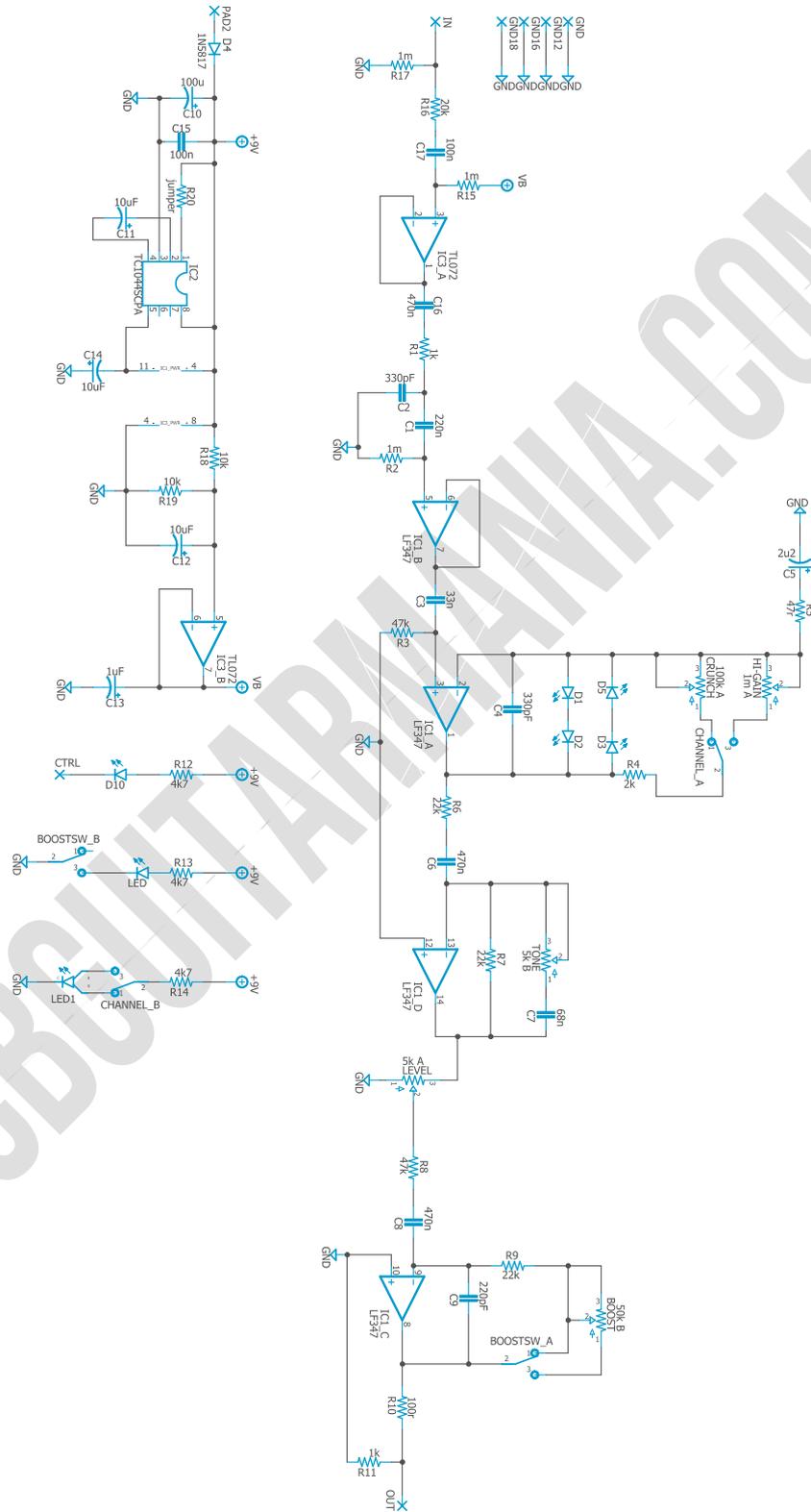
Potentiometers		
Qty	Value	Parts
1	50k B	BOOST
1	100k A	CRUNCH
1	5k A	LEVEL
1	5k B	TONE
1	1m A	HI-GAIN

Switches		
Qty	Value	Parts
1	DPDT FOOTSWITCH	BOOSTSW
1	DPDT FOOTSWITCH	CHANNEL

Capacitors		
Qty	Value	Parts
1	LF347	IC1
1	TC1044SCPA	IC2
1	TL072	IC3

Diodes		
Qty	Value	Parts
1	3mm red LED	D1
1	3mm red LED	D2
1	3mm red LED	D3
1	1N5817	D4
1	3mm red LED/Jumper	D5
1	3mm red LED	D10
1	3mm red LED	LED
1	BI COLOR LED common cathode	LED1

# Schematic



# Components Recommendations

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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

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If this is one of your first projects, I recommend you 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

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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

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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

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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!