

# Angry Carlos

## Based on:

JHS Angry Charlie/M-audio Crunch Box

## Effect type:

Distortion -Overdrive

## Build difficult:

Average

## Amount of parts:

Average, total 37 components

## Technology:

Opamp

## Power consumption:

9V

## Enclosure type:

1590b

## Get your board at:

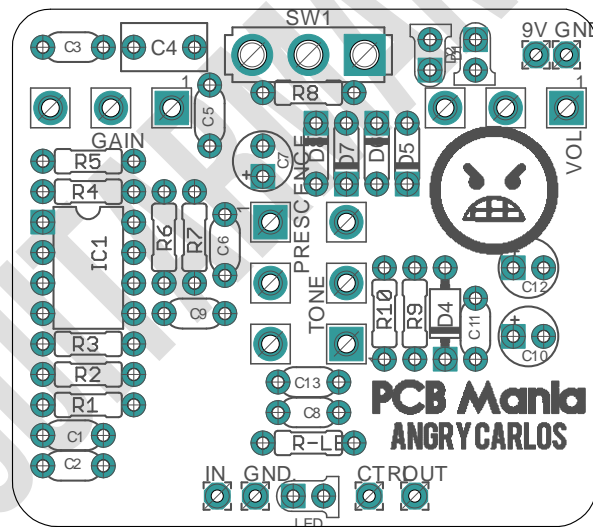
[Angry Carlos](#)

## Get your kit at:

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

## Project overview:

The Angry Carlos has been inspired on pedals such as JHS's Angry Charlie and M-Audio's Crunch Box as one of the best Marshall in a box.



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## Introduction

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The Angry Carlos is one of the most versatile boards for building Marshall in a box, allowing you to build either JHS Angry Charlie and M-audio Crunchbox just by adding one capacitor.

To make this project even more unique, we included a diode selector toggle for selecting between the stock red LEDs, no diodes, and your custom option. For the last one, we recommend using only one set of diodes for D5 and D6 and leaving D7 and D8 just with a jumper, or it will get too compressed, resulting in too much volume loss. However, you can experiment with placing one diode or LED on D7 and a jumper on D8 for asymmetrical clipping.

This board is ready to be wired as True Bypass and has a compact design that fits on a 1590b enclosure, and the Diode toggle selector is on board.

## Controls

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- PRESENCE
- TONE
- VOL
- GAIN

# Bill of materials

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Resistors	
Part	Value
R-LED	2K7-4K7
R1	1m
R2	1k
R3	1m
R4	1k
R5	1k
R6	10k
R7	1m
R8	470r
R9	22k
R10	22k

Capacitors	
C1	22n
C2	1n
C3	100pf
C4	220n
C5	100n
C6	100pf
C7	2.2uf Electro
C8	22nf
C9	22nf
C10	10uf Electro
C11	100n
C12	100uf Electro
C13*	100nf (optional)*

Potentiometers	
PRESCENCE	B- 25k
TONE	C- 10k
VOL	A- 100k
GAIN	B- 100K

Switches	
SW1	SPDT ON-OFF-ON

IC	
IC1	LM833

Diodes	
D1	Red Led 3mm
D2	Red Led 3mm
D4	1n5817
D5**	Builder choice
D6**	Builder choice
D7**	Builder choice
D8**	Builder choice

# Shopping list

Resistors		
Qty	Value	Parts
1	2K7-4K7	R-LED
3	1m	R1, R3, R7
3	1k	R2, R4, R5
1	10k	R6
1	470r	R8
2	22k	R9, R10

Capacitors		
3	22n	C1, C8, C9
1	1n	C2
2	100pf	C3, C6
1	220n	C4
1	100n	C5
1	2.2uf Electro	C7
1	10uf Electro	C10
2	100n	C11, C13*(optional)
1	100uf Electro	C12

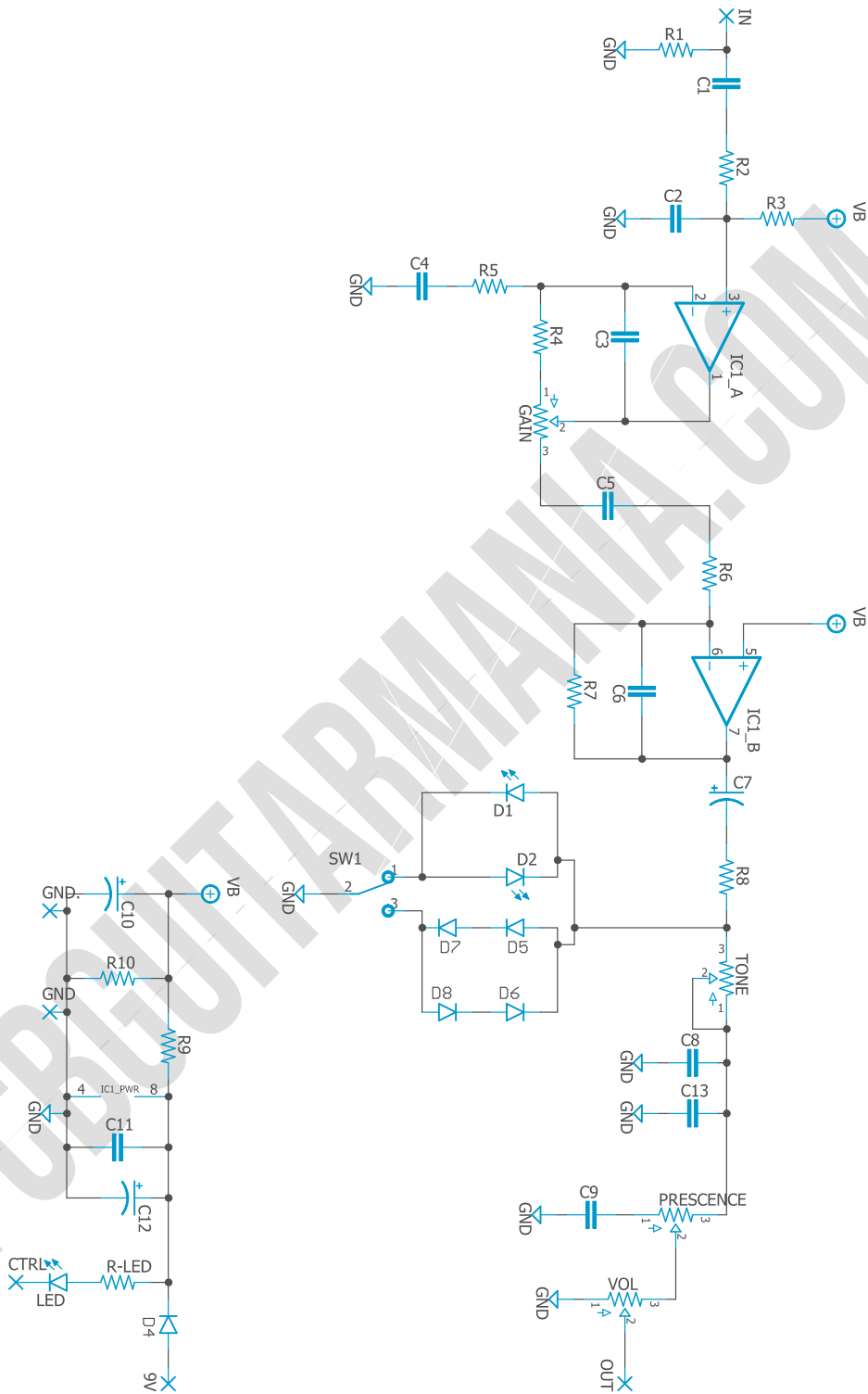
Potentiometers		
1	B- 25k	PRESCENCE
1	C- 10k	TONE
1	A- 100k	VOL
1	B- 100K	GAIN

Switches		
1	SPDT ON-OFF-ON	SW1

IC		
1	LM833	IC1

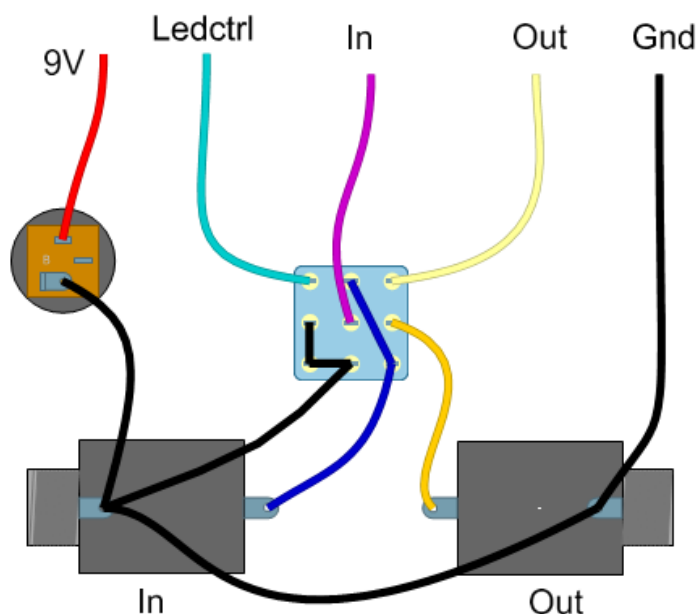
Diodes		
2	Red Led 3mm	D1, D2
1	1n5817	D4
4	Builder choice	D5**, D6**, D7**, D8**

# Schematic



## Off board wiring

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## 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 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

## C13\*:

Leave it unpopulated for the M-audio Crunch box mode.

## D5 to D8\*\*:

In this project I included space to fit 4 diodes, as alternative clipping options. Although I found that most of the diodes might be a bit too compressed, is great to experiment with different LED combinations and colors. If you wanna use only a two diodes instead of four, you **MUST** place jumpers on the place for D7 and D8, otherwise the diodes wont clip.

# 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 1590b 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!