

Green Octaver (Octa-plus)

Based on:
EQD Tentacle/Green Ringer
Effect type:
Analog Octave up
Build difficult:
Beginner

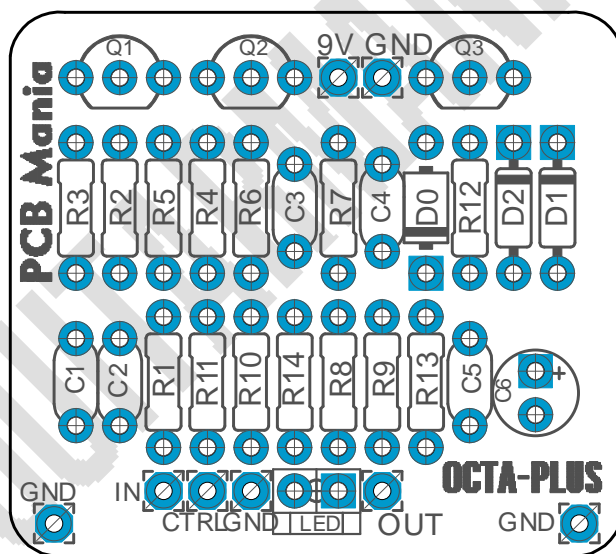
Amount of parts:
Low, total 26 components
Technology:
Silicon transistors
Power consumption:
2mA (9v)

Enclosure type:
1590b
Get your board at:
[Green octaver](#)
Get your kit at:
[Das Musikding \(Europe\)](#)

Project overview:

The Octa-Plus is an easy to build knob less analog octave up that matches perfectly with any time of fuzzes.

This is a multipurpose board that allows you to choose which version do you want to build, the vintage one based on the green ringer, or the more modern inspired on EQD Tentacle.



Real dimensions

35mm x 31mm

1.4" x 1.25"

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Introduction

The Octa-plus is an analog octave up, the effect will become much more pronounced when using your neck pickup and playing above the 12th fret.

The real magic of this circuit isn't the simplicity by itself, you will see the truly potential of this unit once you pair it with other pedals.

Place a booster like our [Amazing booster](#) or [Freeman Boost](#) ahead of the Octa-plus to improve its performance and to increase the gain on the upper octave.

With a fuzz after the octave on the chain you will be able achieve any kind of crazy octave up fuzzy goodness. You can try with the killer combo of the [Horn Device](#) and the [Reaper Device](#), just as on the EQD Hoff Reaper, experiment with the [Ra's Pharaoh](#) to unleash total doomy madness, go crazy with the [Fuzz Maker](#), or get on Jimi Hendrix shoes with the [Voodoo Fuzz!](#)

You can fit this small board all together with some other circuits in the same enclosure to pair them together and create unique custom pedals at your taste.

Controls

- No controls :D

Bill of materials (Standard version)

Resistors	
Part	Value
R1	2m2
R2	160k
R3	6k2
R4	18k
R5	560k
R6	10k
R7	10k
R8	68k
R9	68k
R10	22k
R11	22k
R12	10k
R13	47k
R14	4k7

Capacitors	
Part	Value
C1	100p**
C2	47n
C3	47n
C4	47n
C5	100n
C6	100u

Transistors	
Part	Value
Q1	2N5089
Q2	2N3906-
Q3	2N5089

Diodes	
Part	Value
D0	1n5817
D1	1n4148*
D2	1n4148*

Shopping list

Resistors		
Qty	Value	Parts
1	2m2	R1
2	22k	R10, R11
1	47k	R13
1	4k7	R14
1	160k	R2
1	6k2	R3
1	18k	R4
1	560k	R5
3	10k	R6, R7, R12
2	68k	R8, R9

Diodes		
Qty	Value	Parts
1	1n5817	D0
2	1n4148*	D1, D2
1	3mm LED	LED

Transistors		
Qty	Value	Parts
2	2N5089	Q1, Q3
1	2N3906-	Q2

Capacitors		
Qty	Value	Parts
1	100p	C1
3	47n	C2, C3, C4
1	100n	C5
1	100u	C6

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 diodes*

In this circuit the diodes can certainly affect the overall effect of the pedal itself. For D1/D2 its suggested at first try to start with 1N4148, these are one of the most typically used diodes on the industry and will perform efficiently in this circuit.

However if are and advanced builder and you want to dig deep into modding your tone, first of all I'd recommend you to use a matched pair of diodes with similar Vf (you can measure it with the Multimeter on the diode mode).

Consider that the Vf poses a kind of gating effect. So if you try to extend the note with finger vibrato, a higher Vf will cause the circuit to cut the note off, rather than let it sustain a little longer. And I can't emphasize enough that the octaving is strongest as the harmonics in the original note disappear and leave the fundamental.

You can experiment yourself with a pair of Schottky diodes due their low VF nature, or with some germaniums as 1n34 for a gated octave sound. Socket and try!

Capacitor C1 and Green Ringer Version**

This capacitor isn't present on the original Green Ringer, it was added for a more modern performance on the EQD version.

If you want to build a closer version to the Green Ringer leave C1 unpopulated.

Build Notes

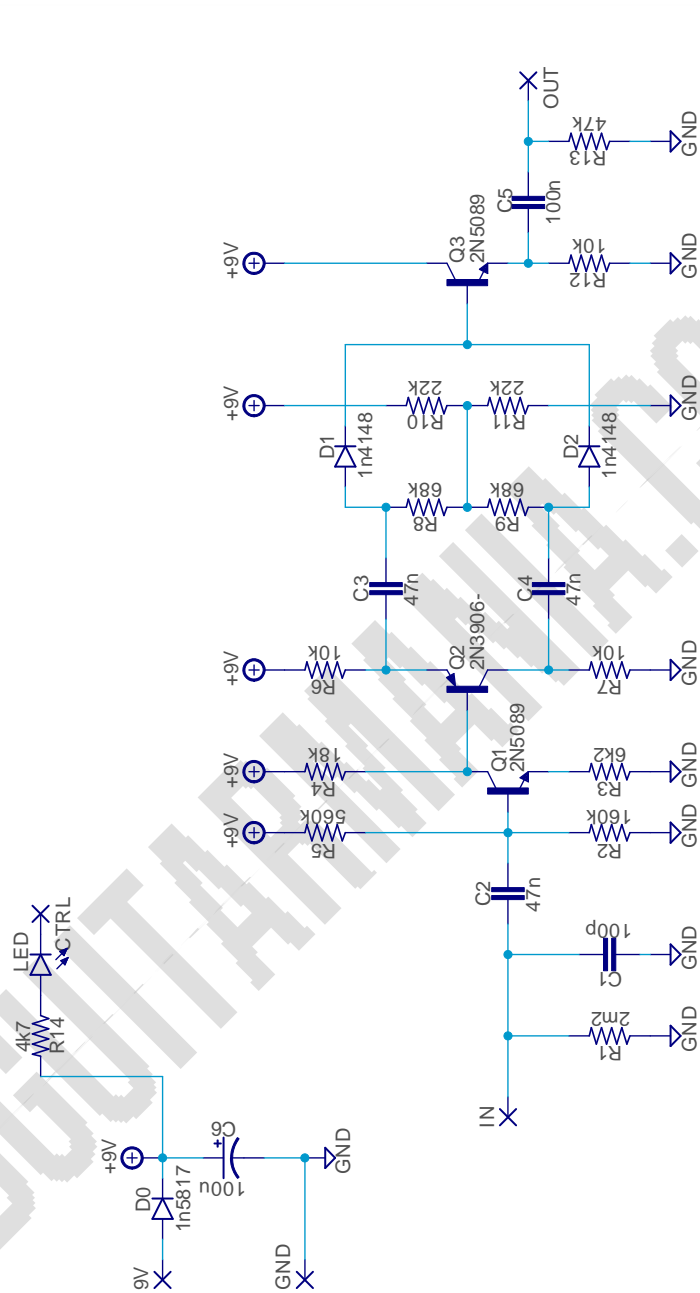
If this is one of your first projects I recommend you to take a look on our [Pedal Building Guide](#)

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

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Schematic

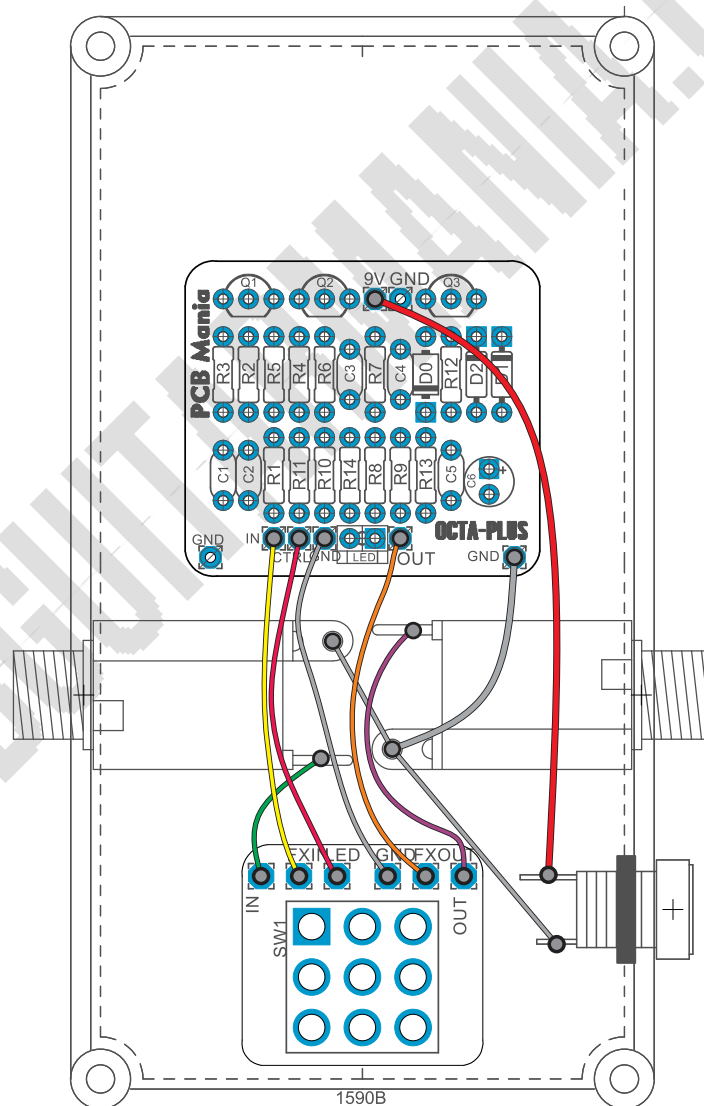


Wiring Diagram

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.

You can take a look on the following diagram to understand the general connections. For further information check our [Pedal Wiring guide](#).



Drill Template

This Project has been planned to fit into a 1590B enclosure type (122x67x35mm approx.)

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print in an A4 page.

As this is knob less project its recommended to use the extra GND pads to fix the board inside the enclosure.

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!