

# Life Device (Compact)

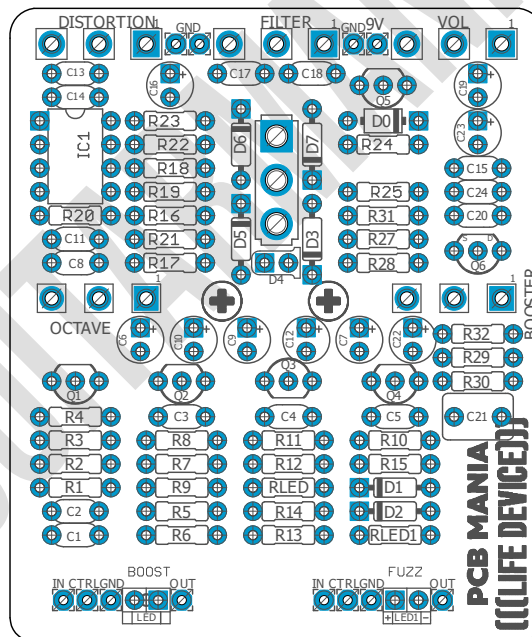
**Based on:**  
EQD Life pedal  
**Effect type:**  
Ultimate DOOM machine  
**Build difficult:**  
High

**Amount of parts:**  
High, total 81 components  
**Technology:**  
Octaver + Rat+Booster  
**Power consumption:**  
9V (DO NOT TRY HIGHER VOLTAGES)

**Enclosure type:**  
125b  
**Get your board at:**  
[Life Device](#)  
**Get your kit at:**  
[Das Musikding \(Europe\)](#)

## Project overview:

What happens when you mix a Rat with an Octaver and a Booster? TOTAL DOOM. That is the secret behind EQD hyped Life Pedal, that one that was sold out after a few hours of being released. But you don't have to wait any longer for long waiting lists or pay a huge ton of money to DOOM your tone; now you can build it your own with our PCBs!



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# Introduction

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Hyped hyped hyped for a reason is the EQD life pedal <sup>™</sup> that takes the concept of good old Rat <sup>™</sup> pedal to the next level by adding a Green ringer octave circuit In front and a clean boost after. That gives you the ultimate doom machine that's just out of stock within hours whenever EQD does a new run. So we thought we help you out by giving you a DIY board. Honestly, we are a little late with our design. To make a difference to all the other guys offering boards, we made our take as small and pedalboard-friendly as possible and designed it to fit in a 125B with two footswitches and a toggle for clipping option.

If you receive v1.2, you can skip this part. For the guys who receive one of the boards from the giveaway, the toggle to switch the octave on and off (DPDT) is too close to the clipping toggle (SPDT). You either place one of the switches somewhere on the side of the enclosure and run wires or jumper the octave switch that's not added to the final version anymore because you have the potentiometer as well; that makes that toggle a little pointless anyways. To jumper it, you run two wires both from the middle pad to the pad towards the side of the footswitches (bottom), as shown in the picture. Please don't get confused; in the picture, I also added a single jumper for the clipping option because I didn't want to have the toggle out of the center.

All this has been corrected for the final 1.2 version.

## Controls

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- Volume
- Gain
- Octave
- Filter
- Booster
- Diode Switch

# Bill of materials

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Resistors	
Part	Value
R1	1m
R2	1k
R3	1m
R4	10k
R5	470k
R6	47k
R7	22k
R8	2k2
R9	10k
R10	10k
R11	100k
R12	100k
R13	47k
R14	47k
R15	10k
R16	1M
R17	47R
R18	10k
R19	10k
R20	1k
R21	560R
R22	1k
R23	1K5
R24	1M
R25	10k
R27	1m
R28	1k
R29	470k
R30	470k

R31	10k
R32	470r
RLED	4k7
RLED1	4k7

Capacitors	
Part	Value
C1*	100p
C2	100n
C3	100n
C4	100n
C5	100n
C8	22n
C11	1nf
C13	100pf
C14**	30pf
C15	100n
C17	3n3
C18	22n
C20	100pf
C21	1u
C24	100n

Electrolytics Capacitors	
Part	Value
C6	1u
C7	1u
C9	2u2
C10	4u7
C12	10u

<b>C16</b>	4u7
<b>C19</b>	1u
<b>C22</b>	10u
<b>C23</b>	100u

<b>Q3</b>	2N3906
<b>Q4</b>	2N5089
<b>Q5</b>	2N5457
<b>Q6</b>	BS170

<b>Potentiometers</b>	
<b>Part</b>	<b>Value</b>
<b>OCTAVE</b>	50k B
<b>BOOSTER</b>	100K A
<b>DISTORTION</b>	100k A
<b>FILTER</b>	100k A
<b>AMPLITUDE</b>	100k A

<b>Switches</b>	
<b>Part</b>	<b>Value</b>
<b>SW1</b>	SPDT ON/OFF/ON

<b>IC</b>	
<b>Part</b>	<b>Value</b>
<b>IC1</b>	LM308N

<b>Diodes</b>	
<b>Part</b>	<b>Value</b>
<b>D0</b>	1n5817
<b>D1</b>	Germanium
<b>D2</b>	Germanium
<b>D3</b>	1N4148
<b>D4</b>	3mm Red LED
<b>D5</b>	1N4148
<b>D6</b>	1N4148
<b>D7</b>	1N4148
<b>LED</b>	3mm Red LED
<b>LED1</b>	3mm Red LED

<b>Transistors</b>	
<b>Part</b>	<b>Value</b>
<b>Q1</b>	2N5457
<b>Q2</b>	2N5089

# Shopping list

Resistors		
Qty	Value	Parts
2	100k	R11, R12
8	10k	R4, R9, R10, R15, R18, R19, R25, R31
4	1k	R2, R20, R22, R28
5	1m	R1, R3, R27, R16, R24
1	22k	R7
1	2k2	R8
3	470k	R5, R29, R30
1	470r	R32
3	47k	R6, R13, R14
2	4k7	RLED, RLED1
1	47r	R17
1	560R	R21
1	1K5	R23

Capacitors		
Qty	Value	Parts
7	100n	C2, C3, C4, C5, C15, C24
3	100p	C1*, C13, C20

1	1nf	C11
2	1u	C19, C21
2	22n	C8, C18
1	3n3	C17
1	30p	C14**

Electrolytics Capacitors		
Qty	Value	Parts
1	100u	C23
2	10u	C12, C22
3	1u	C6, C7, C19
2	4u7	C10, C16
1	2u2	C9

Potentiometers		
Qty	Value	Parts
1	50k B	OCTAVE
4	100K A	BOOSTER, DISTORTION, FILTER, AMPLITUDE

IC		
Qty	Value	Parts
1	LM308N	IC1

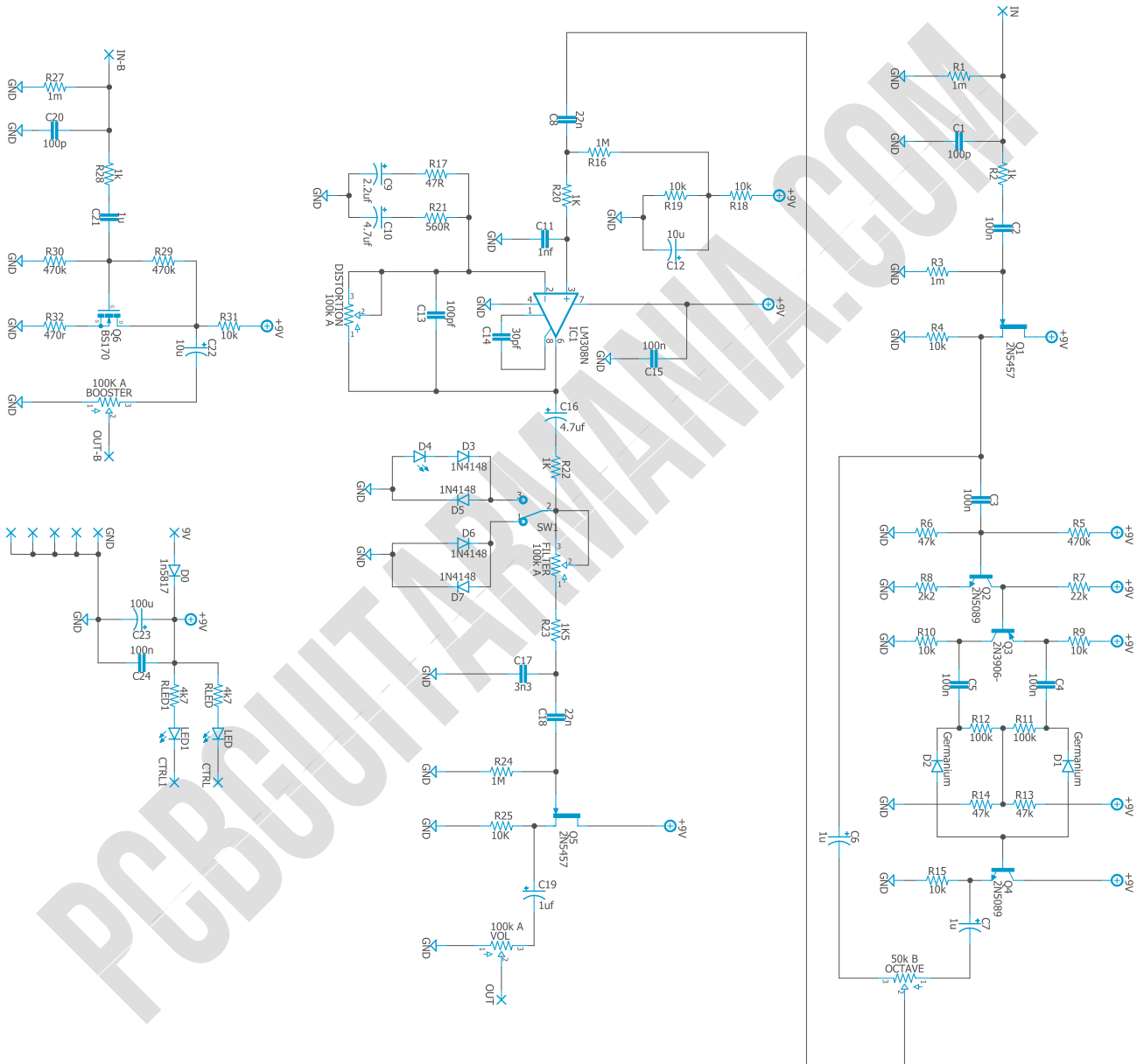
1	LM308N	IC1
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Transistors		
Qty	Value	Parts
1	2N3906-	Q3
2	2N5089	Q2, Q4
2	2N5457	Q1, Q5
1	BS170	Q6

Switches		
Qty	Value	Parts
1	SPDT ON/OFF/ON	SW1

Diodes		
Qty	Value	Parts
1	1n5817	D0
6	1n4148	D3, D5, D6, D7
2	Germanium	D1, D2
3	3mm Red LED	D4, LED, 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.

## Alternatives ICs and Substitutions

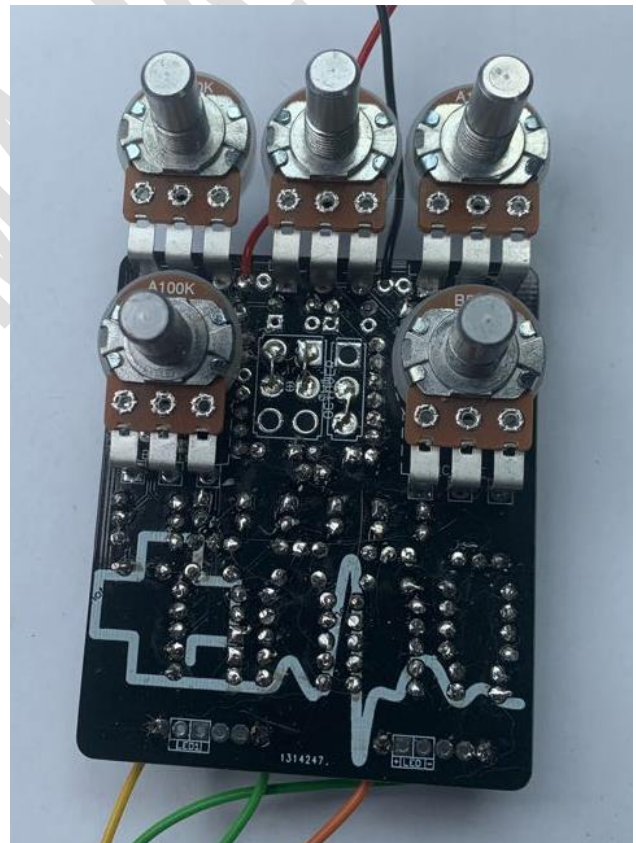
**IC1:**OP07, LM741 (leave C14 unpopulated)

**PF5102:** 2N5457

**2N5089:** 2N5088

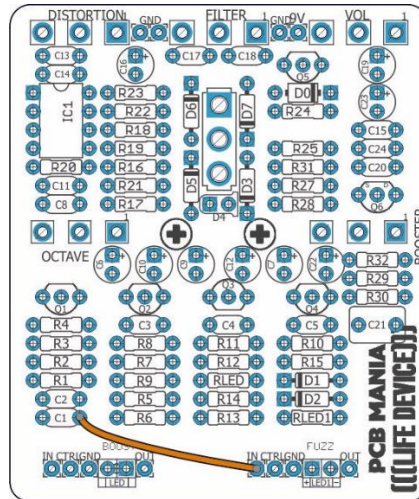
### FOR THE GIVEAWAY VERSION:

- **R26:** Should be empty
- **Octave Switch:** It would work better bypassed; as explained above is pretty useless, you can simply control it with the knob. Check the image below as a reference.
- **Octave knob** is working backward; if you want to make it clockwise, reverse the pot's connections and wire terminal 3 into pad 1 (square pad) and terminal 1 into pad 3.
- Please Ignore the diode switch bypassed on the picture; that's just a matter of personal choice. We recommend placing the diode toggle switch to choose your favorite diode configuration.



### Important C1\*:

In the last version of this board is a missing connection between C1 and IN; to make the Fuzz side work, you need to make a cable connection between the two components, as shown in the image below:



14\*\*

This value is optional, place it only when using the LM308 chip to compensate for its performance. When using an alternative type like OP07CP and LM741, it is not necessary to compensate for anything because it is already internally compounded.

## 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

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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 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!

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 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!