Life Device (Compact)

Based on:
EQD Life pedal

Effect type:
Ultimate DOOM machine

Build difficult:
Average

Amount of parts:
High, total 81 components

Technology:
Octaver + Rat+Booster

Power consumption:
9V(**DO NOT TRY HIGHER VOLTAGES**)

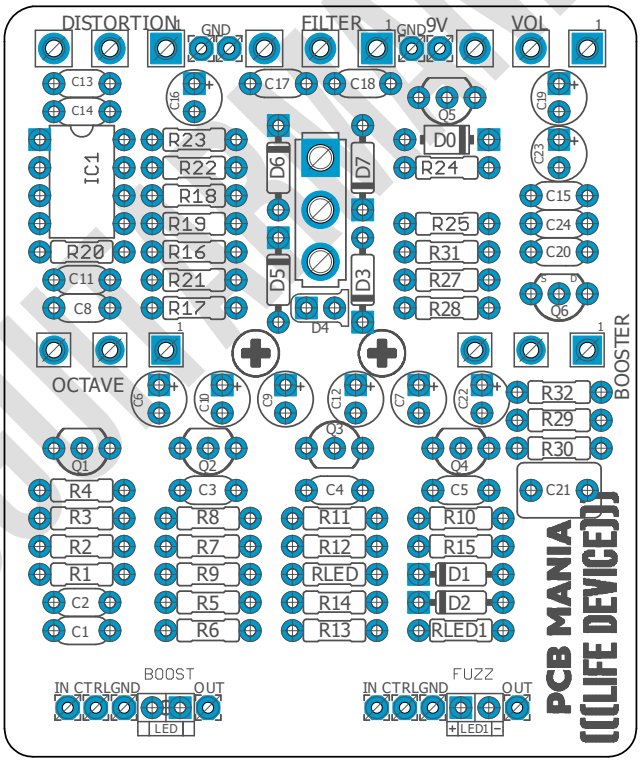
Enclosure type:
125b

Get your board at:
Life Device

Get your kit at:
Das Musikding (Europe)

Project overview:

What happens when you mix a Rat with and 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

Hyped hyped hyped for a reason is the EQD life pedal ™ that takes the concept of good old Rat ™ 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. So 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 to 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. 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 center.

All this has been corrected for the final 1.2 version.

Controls

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

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Bill of materials

Resistors	
Part	**Value**
R1	10k
R2	10k
R3	10k
R4	10k
R5	470k
R6	47k
R7	22k
R8	2k2
R9	10k
R10	10k
R11	100k
R12	100k
R13	47k
R14	47k
R15	10k
R27	1m
R28	1k
R29	470k
R30	470k
R31	10k
R32	470r
RLED	4k7
RLED1	4k7

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

Electrolytics Capacitors	
Part	**Value**
C9	2.2u
C6	1u
C7	1u
C10	4.7u
C12	10u
C16	4.7u
C19	1u
C22	10u
C23	100u

Potentiometers	
Part	**Value**
BOOSTER	100k A
DISTORTION	100k A
FILTER	100k A
VOL	100k A
OCTAVE	50k B

IC	
Part	**Value**
IC1	LM308N

Transistors	
Part	**Value**
Q1	PF5102
Q2	2N5089
Q3	2N5087
Q4	2N5089
Q5	PF5102
Q6	BS170

Switches	
Part	**Value**
SW1	SPDT ON-OFF-ON

Diods	
Part	**Value**
D0	1n5817
D1	Germanium diode
D2	Germanium diode
D3	1n4148
D4	3mm red LED
D5	1n4148
D6	1n4148
D7	1n4148
LED	3mm red LED
LED1	3mm red LED

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Shopping list

Resistors		
Qty	**Value**	**Parts**
2	100k	R11, R12
8	10k	R1, R2, R3, R4, R9, R10, R15, R31
1	1k	R28
1	1m	R27
1	22k	R7
1	2k2	R8
3	470k	R5, R29, R30
1	470r	R32
3	47k	R6, R13, R14
2	4k7	RLED, RLED1

Capacitors		
Qty	**Value**	**Parts**
7	100n	C1, C2, C3, C4, C5, C15, C24
1	100p	C20
1	1nf	C11
2	1u	C21
2	22n	C8, C18
1	3n3	C17

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

IC		
Qty	**Value**	**Parts**
1	LM308N	IC1

Transistors		
Qty	**Value**	**Parts**
1	2N5087	Q3
2	2N5089	Q2, Q4
2	PF5102	Q1, Q5
1	BS170	Q6

Switches		
Qty	**Value**	**Parts**
1	SPDT ON-OFF-ON	SW1

Diodes		
Qty	**Value**	**Parts**
2	Germanium Diode	D1, D2
1	1n5817	D0
4	1N4148	D3, D5, D6, D7
2	3mm LED	LED, LED1
2	4k7	RLED, RLED1
1	3mm RED LED	D4

Capacitors electrolitics		
Qty	**Value**	**Parts**
1	2.2u	C9
3	1u	C6, C7, C19
2	4.7u	C10, C16
2	10u	C12, C22
1	100u	C23

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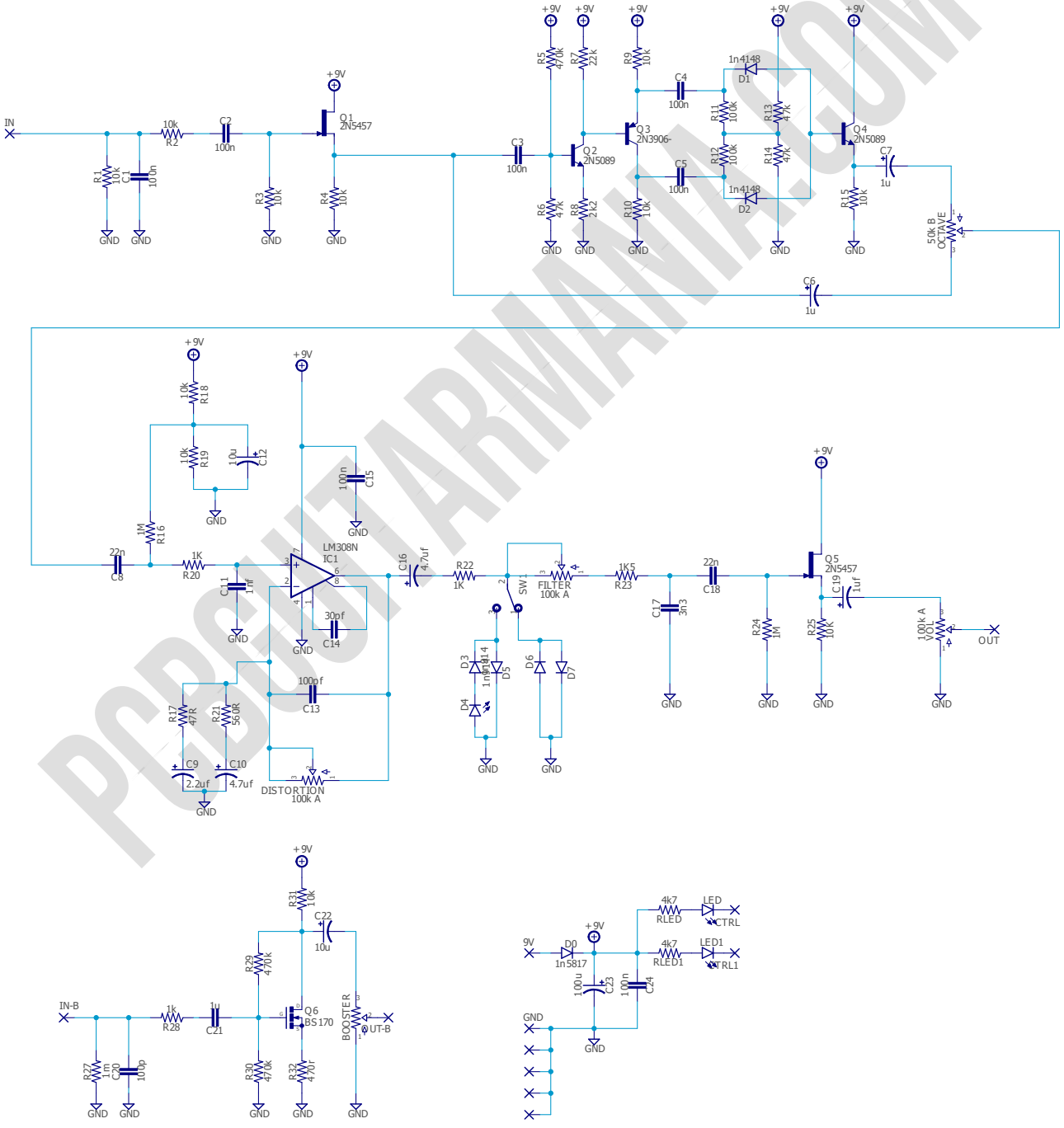
Schematic



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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.

Alternatives ICs and Substitutions

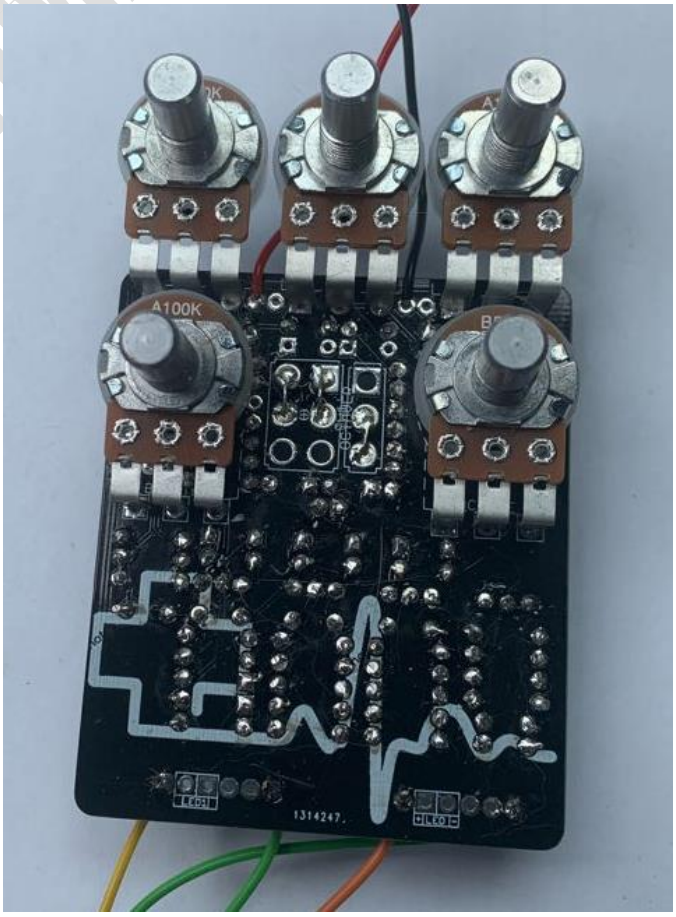
IC1:OP07, LM741 (leave C14 unpopulated)

PF5102: 2N5457

2N5089: 2N5088

FOR THE GIVEAWAY VERSION:

- R26: Should be empty
- Octave Switch: Would work better bypassed, as explained above is pretty useless, you can simply control it with the knob. Check the image below as reference
- Octave knob is working backwards, if want to make it clockwise reverse the connections of the pot and wire terminal 3 into the 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



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personal, We recommend to place the diode toggle switch to choose your favorite diode configuration.

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

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.

This board has been designed to match our EZ 3PDT PCB check it here to access to our Pedal Wiring Guide.**The booster goes after the main drive!**

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 in an A4 page.

Licensing and Usage

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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.

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