Organic Device

Based on:
EQD Organizer

Amount of parts:
Average, total 44 components

Enclosure type:
125b

Effect type:
Polyphonic organ emulator

Technology:
Spin FB-1

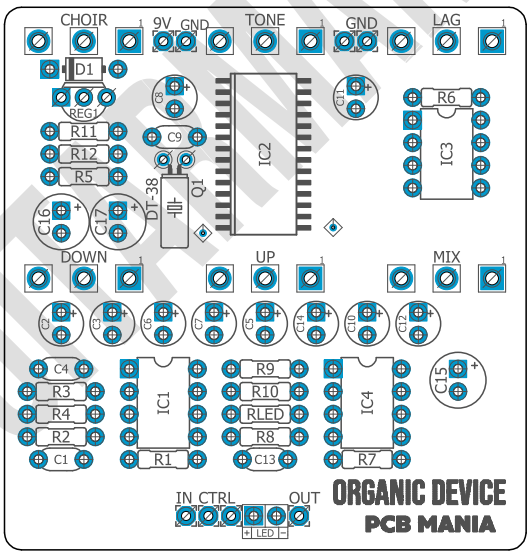
Get your board at:
Organic Device

Build difficult:
Intermediate

Power consumption:
9V

Get your kit at:
Das Musikding (Europe)

Project overview:
Inspired by the EQD's Organizer, this divine pedal can create huge church organ tones for your guitar. Not every day I can write about a circuit designed to deliver the sound of an old church organ crossed with the funky MCI Guitorgan that even allows and encourages you to come up with sonic colors all your own.



Index

Introduction

Within the 6-knob layout, you have control over octave up, octave down, and a choir control for blending in two octaves up and down. The Lag dial provides changeable control over delaying the effect's entrance, and an immediate control blends your straight guitar signal back in. Also, the high-quality analog/ DSP circuit retains an 'Organic' sound in your rig. One glance at the intuitively labeled controls lets you know exactly what you need to do to add in high-end shimmer, low-octave rumble, or a bit of delay for ambiance.

I could say many things about this pedal's hypnotic and divine soundscapes, but good sounds speak louder than words, so I genuinely recommend trying this board. Now, you must excuse me; I will be in my chambers playing some organ-like waves for the next couple of hours.

Controls

- Choir
- Down
- Lag
- Mix
- Tone
- Up

Bill of materials

Resistors	
Part	**Value**
R1	1M
R2	100k
R3	1k
R4	100k
R5	10k
R6	100r
R7	100k
R8	100k
R9	1k
R10	100k
R11	10k
R12	10k
RLED	4k7

Capacitors	
Part	**Value**
C1	100n
C4	1n
C9	15p
C13	2n2

Electrolytics Capacitors	
Part	**Value**
C2	1u
C3	1u
C5	1u
C6	1u
C7	1u
C8	10u
C10	1u
C11	1u
C12	1u
C14	1u
C15	100u
C16	47u
C17	47u

Potentiometers	
Part	**Value**
CHOIR	100K B
DOWN	100K B
LAG	100K B
MIX	100K B
TONE	100K B
UP	100K B

Trimpots	
Part	**Value**
IC1	TL072
IC2	Spin FV1
IC3	**24LC32A EEPROM***
IC4	TL072
REG1	L78L33

Crystals	
Part	**Value**
X1	32.768KHz Crystal (DT-38)

Diods	
Part	**Value**
D1	1n5817
LED	3mm red LED

Shopping list

Resistors		
Qty	**Value**	**Parts**
5	100k	R2, R4, R7, R8, R10
1	100r	R6
3	10k	R5, R11, R12
1	1M	R1
2	1k	R3, R9
1	4k7	RLED

Capacitors		
Qty	**Value**	**Parts**
1	100n	C1
1	15p	C9
1	1n	C4
1	2n2	C13

Electrolytics Capacitors		
Qty	**Value**	**Parts**
1	100u	C15
1	10u	C8
9	1u	C2, C3, C5, C6, C7, C10, C11, C12, C14
2	47u	C16, C17

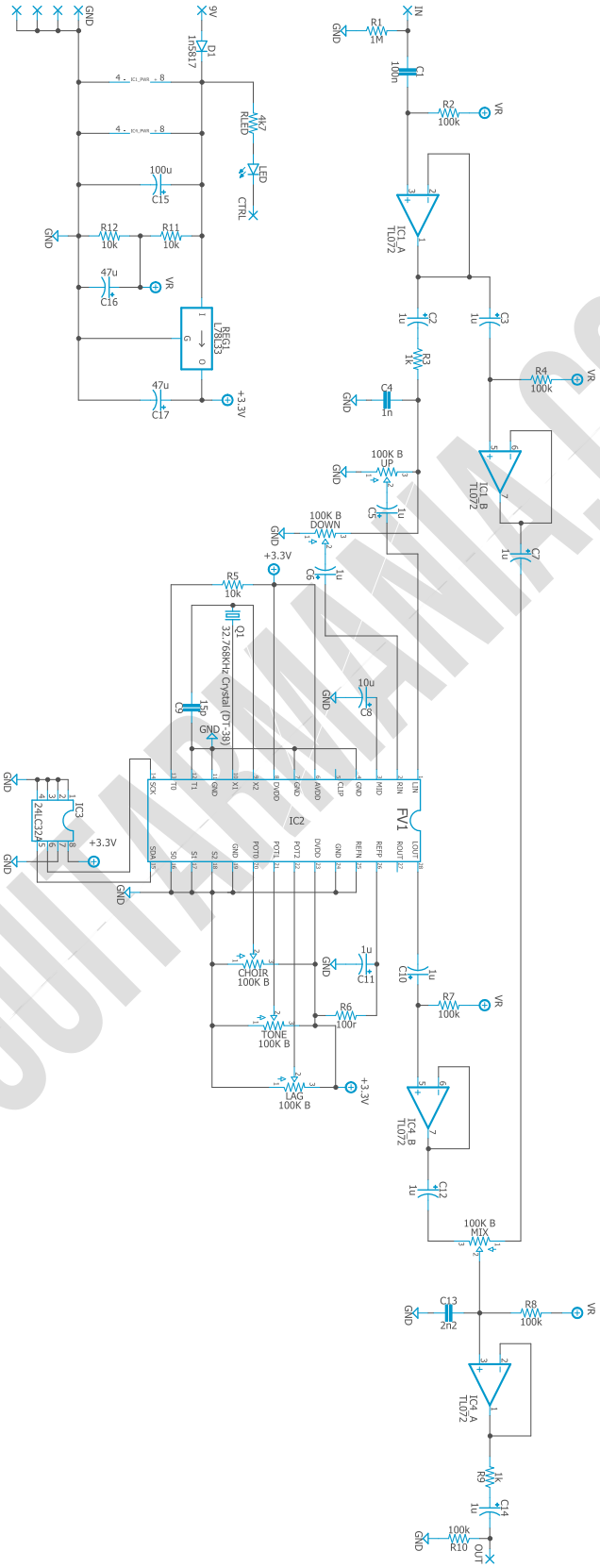
Potentiometers		
Qty	**Value**	**Parts**
6	100K B	CHOIR, LAG, MIX, TONE, UP, DOWN

IC		
Qty	**Value**	**Parts**
1	**24LC32A EEPROM***	IC3
1	Spin FV1	IC2
2	TL072	IC1, IC4
1	L78L33	REG1

Crystals		
Qty	**Value**	**Parts**
1	32.768KHz Crystal (DT-38)	Q1

Diods		
Qty	**Value**	**Parts**
1	1n5817	D1
1	3mm red LED	LED

Schematic



Components Recommendations

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

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

24LC32A EEPROM*

This IC is included in your purchase and it comes with the board.

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

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

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.

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