Ojo Dominatrix!

Based on:
Okko Dominator MKII

Effect type:
Dynamic High gain Distortion

Build difficult:
XXXX

Number of parts:
High, total 81 components

Technology:
Jfet Buffer + 3 Opamp gain stages + Active EQ.

Power consumption:
9V

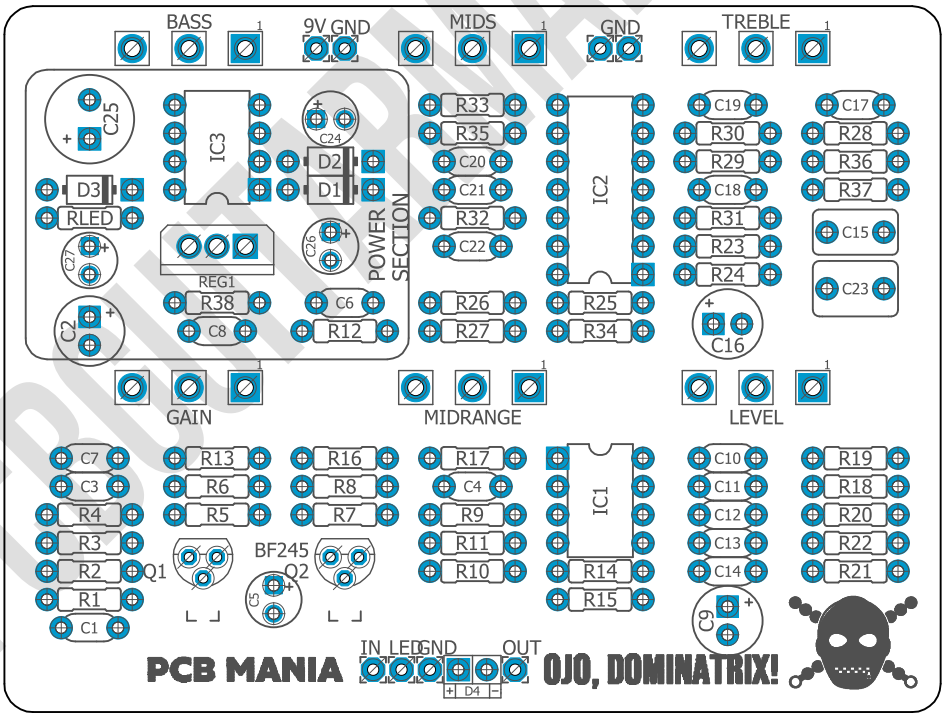
Enclosure type:
1590bb

Get your board at:
Ojo Dominatrix!

Get your kit at:
Das Musikding (Europe)

Project overview:
This is the über-evil twin brother of the Ojo Diablo! Made to deliver the most extreme metal tones. It's all there: massive gain, lightning speed attack, aggressive punch, super-tight low end, and clarity of chords through the entire gain range. The active 3-band EQ with an additional Mid-range pot adds much more versatility than the original toggle.

This version does not feature the gate on board.



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Introduction

There are always some pedal brands that somehow manage to fly under the radar of the gear nerds no matter what they offer sound-wise. Okko ™ is one of them, barely known outside of Germany but fully packed with the most refined engineering and tones that delivers your modern needs.

A built-in charge pump for more headroom. (Make sure your electrolytes can handle them) a super powerful EQ and Distortion with its own voice and powerful attack. I mean...You can imagine that I've built many drive pedals, but this one ended up on my pedalboard right after I put it in the enclosure. I do not even need artwork on the 1590BB...I just had to play it.

The original unit has a toggle for the mids; we replaced this with a potentiometer for the ultimate control over the - for guitar elementary - mids.

Side note, there is a 15v regulator that's pretty tall. I would solder it at the very end of the build. Right after you drilled the enclosure, you get an idea of the best angle. Don't make the same mistake I did! I could barely fit it in the enclosure.

Controls

Potentiometers

- Bass
- Gain
- Midrange
- Mids
- Treble

Bill of materials

Resistors	
Part	**Value**
R1	1M
R2	1M
R3	10K
R4	10K
R5	10K
R6	470K
R7	470K
R8	10K
R9	22K
R10	2K2
R11	100K
R12	39k
R13	1K
R14	10K
R15	10K
R16	15K
R17	1M
R18	47K
R19	10K
R20	47K
R21	47K
R22	39K
R23	1K
R24	1M
R25	10K
R26	10K
R27	10K
R28	2K2
R29	470r
R30	7K5
R31	10K
R32	10K
R33	1K
R34	470K
R35	330r
R36	10K
R37	1M
R38	51r
RLED	4K7

Capacitors	
Part	**Value**
C1	22n
C3	6n8
C4	220n
C6	100p
C7	220n
C8	100n
C10	470p
C11	220n
C12	10n
C13	51n
C14	2n2
C15	470n
C17	22n
C18	22n
C19	22n
C20	220n
C21	68n
C22	1n
C23	680n

IC	
Part	**Value**
IC1	OPA2604CP
IC2	TL074
IC3	IC7660SCPAZ

Electrolytic Capacitors	
Part	**Value**
C2	2.2u
C5	10u
C9	22u

C16	22u
C24	10u**
C25	10u**
C26	10u**
C27	10u**

Potentiometers	
Part	**Value**
BASS	B10K
GAIN	B100K
LEVEL	A100K
MIDRANGE	B1M
MIDS	B25K
TREBLE	B25K

Transistors	
Part	**Value**
Q1	**BF245a***
Q2	**BF245a***
REG1	LM7815

Voltage regulator	
Part	**Value**
Reg1	7815

Switches	
Part	**Value**
-	3PDT Stomp foot

Jacks	
Part	**Value**
-	DC JACK
-	AUDIO JACK
-	AUDIO JACK

Diodes	
Part	**Value**
D1	1N4001
D2	1N4001
D3	1N4001
D4	3mm red LED

Shopping list

Resistors		
Qty	**Value**	**Parts**
1	100K	R11
13	10K	R3, R4, R5, R8, R14, R15, R19, R25, R26, R27, R31, R32, R36
1	15K	R16
3	1K	R13, R23, R33
5	1M	R1, R2, R17, R24, R37
1	22K	R9
2	2K2	R10, R28
1	330r	R35
1	39K	R22
1	470r	R29
3	470K	R6, R7, R34
3	47K	R18, R20, R21
1	4K7	RLED
1	51r	R38
1	7K5	R30
1	39k	R12

Potentiometers		
Qty	**Value**	**Parts**
1	A100K	LEVEL
1	B100K	GAIN
1	B10K	BASS
1	B1M	MIDRANGE
2	B25K	MIDS, TREBLE

Capacitors		
Qty	**Value**	**Parts**
1	100n	C8
1	100p	C6
1	10n	C12
1	1n	C22
4	220n	C4, C7, C11, C20
4	22n	C1, C17, C18, C19
1	2n2	C14
1	470n	C15
1	470p	C10
1	51n	C13
1	680n	C23
1	68n	C21
1	C3	6n8

Electrolytic Capacitors		
Qty	**Value**	**Parts**
5	10u**	C5, C24, C25, C26, C27
1	2.2u	C2
2	22u	C9, C16

IC		
Qty	**Value**	**Parts**
1	IC7660SCPAZ	IC3
1	OPA2604CP	IC1
1	TL074	IC2

Transistors		
Qty	**Value**	**Parts**
1	**BF245a***	Q2
1	**BF245a***	Q1
1	LM7815	Reg1

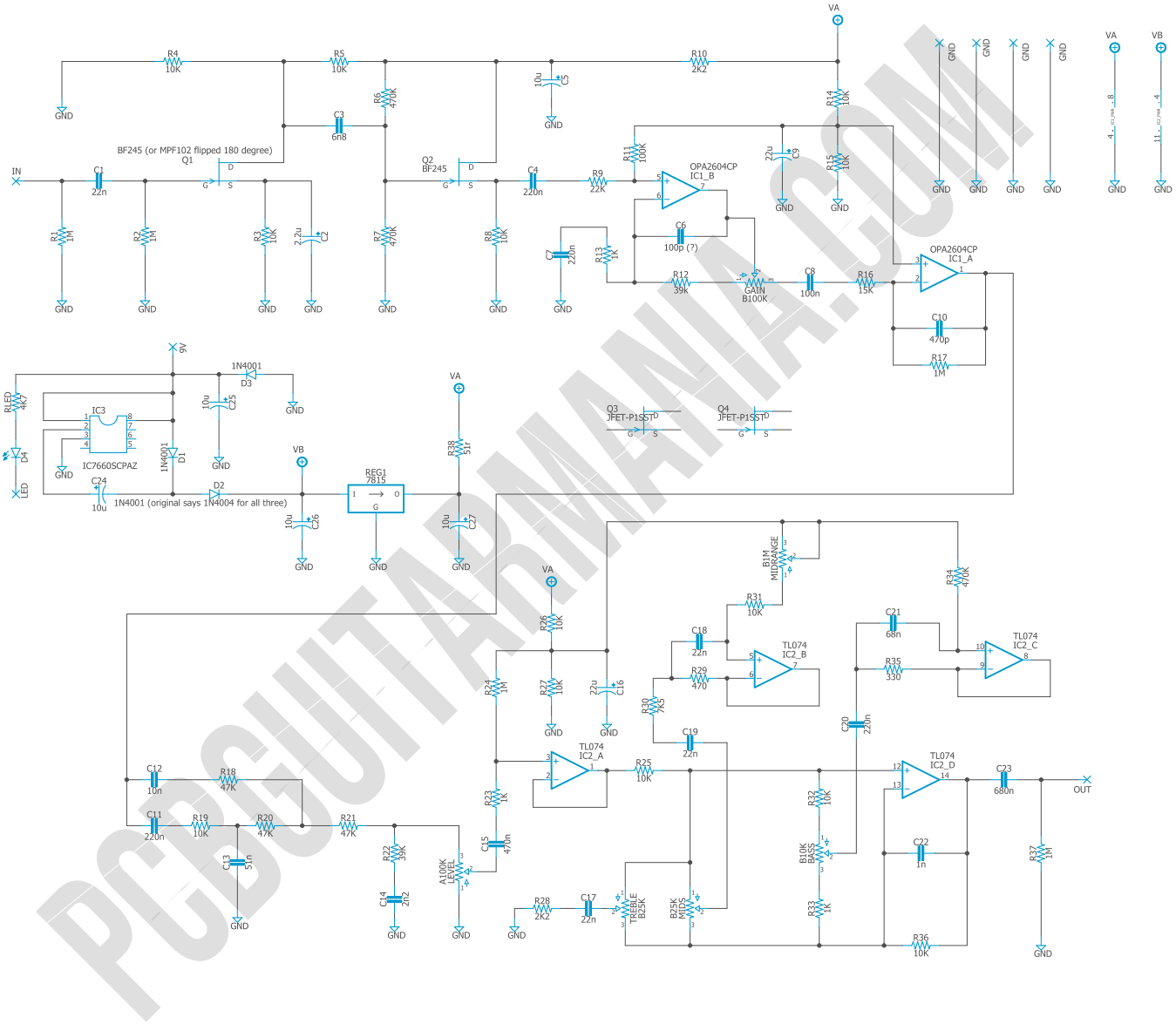
Voltage regulator		
Qty	**Value**	**Parts**
1	7815	Reg1

Switches		
Qty	**Value**	**Parts**
1	3PDT Stomp foot	-

Jacks		
Qty	**Value**	**Parts**
1	DC JACK	-
2	AUDIO JACK	-

Diodes		
Qty	**Value**	**Parts**
1	3mm red LED	D4
3	1N4001	D1, D2, D3

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

BF245a*

This boards allows you to use BF245 in SMD version or standard through hole. Choose and place either of them. A common replacement for this transistor could be MPF102 flipped 180 degrees to the silkscreen. However, this has not been tested yet.

C24, C25, C26, C27 Must be at least suitable for v25!

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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