

Caleidoscopia

Based on:

Catalinbread Pareidolia

Effect type:

Harmonic Tremolo - Vibrato

Build difficult:

Advanced

Amount of parts:

Average, total 62 components

Technology:

XR2206P

Power consumption:

9V

Enclosure type:

125b

Get your board at:

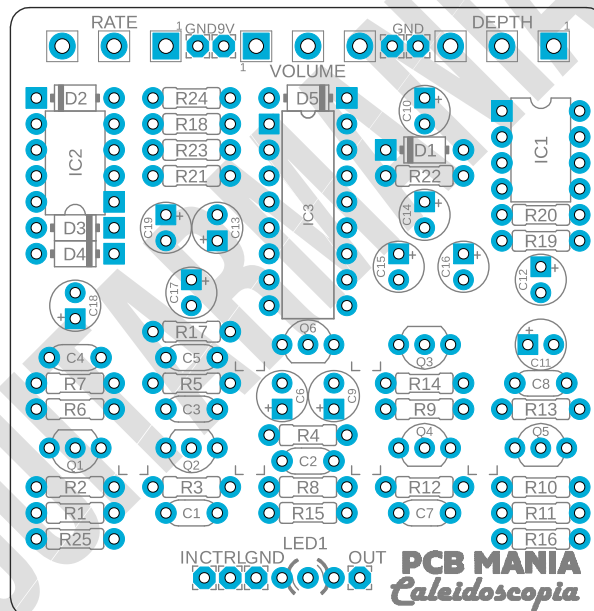
[Caleidoscopia](#)

Get your kit at:

[Das Musikding \(Europe\)](#)

Project overview:

Inspired by Catalinbread Pareidolia. Caleidoscopia is a pedal emulation of the Tremolo from the 60s Brownface Amps.



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Introduction

Caleidoscopia should be described as a mix between vibe, phaser, and tremolo. The result is a complex and subtle sound. That's probably why the original 60th pedal has "harmonic mesmerizer" as a subtitle under the name. It adds a unique color with quite some highs to your tone, even if you set everything at 0% and boost the volume (yes, you can use it as a volume boost). Don't let the fact that it only has rate, depth, and volume deceive you: this little treasure also delivers an extensive range of sounds.

Regarding the technical aspects, there are plenty of fake chips from the XR2206cp out there; We highly recommend using a trusted source for this and spend a few bucks extra than going through the hustle of troubleshooting later. Its ability to boost lets you add a volume pot up to a500k, but it gets harder to dial in the unity level. So, we suggest reducing this value to a250k or even a100k depending on your taste if you're not interested in this little extra feature.

Try the Caleidoscopia into the front of any clean amplifier's effects loop to give your sound some sick 60's swirl.

Many struggle to classify the effect this little gem of a pedal offers; all we can say is that the result is unique and beautiful.

Controls

- DEPTH
- RATE
- VOLUME

Bill of materials

Resistors	
Part	Value
R1	1m
R2	1m
R3	4k7
R4	1m
R5	1m
R6	1k
R7	1k
R8	1m
R9	1m
R10	1m
R11	1m
R12	22k
R13	10k
R14	1m
R15	1k
R16	1k
R17	1m
R18	100k
R19	10k
R20	10k
R21	10k
R22	270r
R23	10k
R24	10k
R25	1m

Capacitors	
Part	Value
C1	270p
C2	100n
C3	2n2
C4	100n
C5	100n
C7	100n
C8	220p

Electrolytics Capacitors	
Part	Value
C6	2u2
C9	2u2
C10	47u
C11	1u
C12	1u
C13	4u7
C14	1u
C15	47u
C16	10u
C17	10u
C18	10u
C19	47u

Potentiometers	
Part	Value
DEPTH	10k b
RATE	1m c
VOLUME	500k a

IC	
Part	Value
IC1	TL072
IC2	TC1044SCPA
IC3	XR2206P

Transistors	
Part	Value
Q1	2N5485
Q2	2N5485
Q3	2N5457
Q4	2N5485
Q5	2N5485
Q6	2N5457

Diodes	
Part	Value
D1	1n4148
D2	1n4148
D3	1n5817
D4	1n5817
D5	1n5817
LED1	LED Dual Common Cathode

Shopping list

Resistors		
Qty	Value	Parts
1	100k	R18
6	10k	R13, R19, R20, R21, R23, R24
4	1k	R6, R7, R15, R16
11	1m	R1, R2, R4, R5, R8, R9, R10, R11, R14, R17, R25
1	22k	R12
1	270r	R22
1	4k7	R3

Capacitors		
Qty	Value	Parts
4	100n	C2, C4, C5, C7
1	220p	C8
1	270p	C1
1	2n2	C3

Electrolytics Capacitors		
Qty	Value	Parts
3	10u	C16, C17, C18
3	1u	C11, C12, C14
2	2u2	C6, C9
3	47u	C10, C15, C19
1	4u7	C13

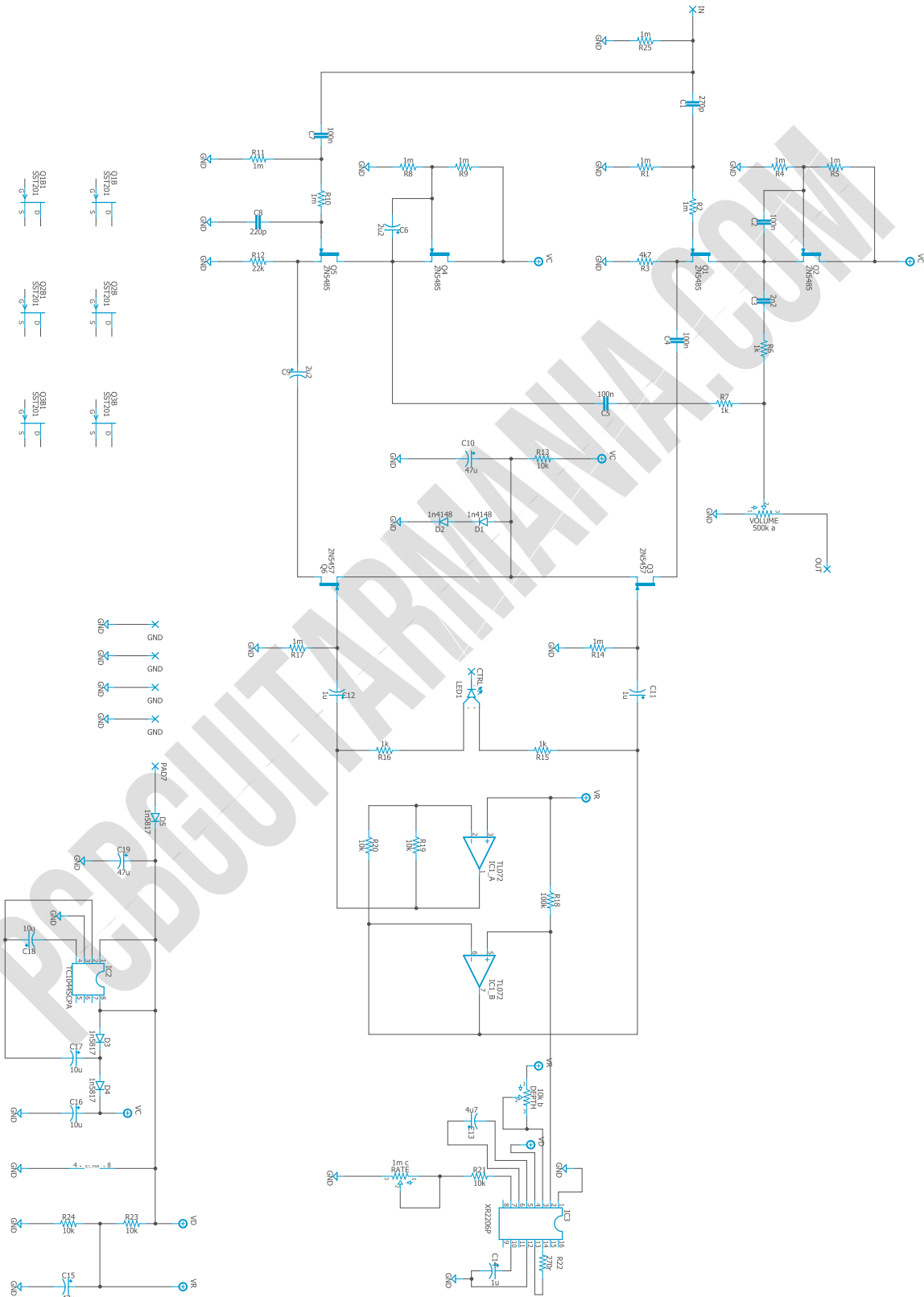
Potentiometers			
Qty	Value	Parts	
1	10k b	DEPTH	
1	1m c	RATE	
1	500k a	VOLUME	

IC		
Qty	Value	Parts
1	TC1044SCPA	IC2
1	TL072	IC1
1	XR2206P	IC3

Transistors		
Qty	Value	Parts
2	2N5457	Q3, Q6
4	2N5485	Q1, Q2, Q4, Q5

Diodes		
Qty	Value	Parts
2	1n4148	D1, D2
3	1n5817	D3, D4, D5
1	LED Dual Common Cathode	LED1

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

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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