

Revolution III & IV

Based on:

Revv G3 & G4™

Effect type:

High Gain Preamp

Build difficult:

Average

Amount of parts:

G3 (81 parts) G4 (76 parts)

Technology:

Dual OpAmp.

Power consumption:

9V(22mA)

Enclosure type:

125b

Get your board at:

[Revolution Pack](#)

Get your kit at:

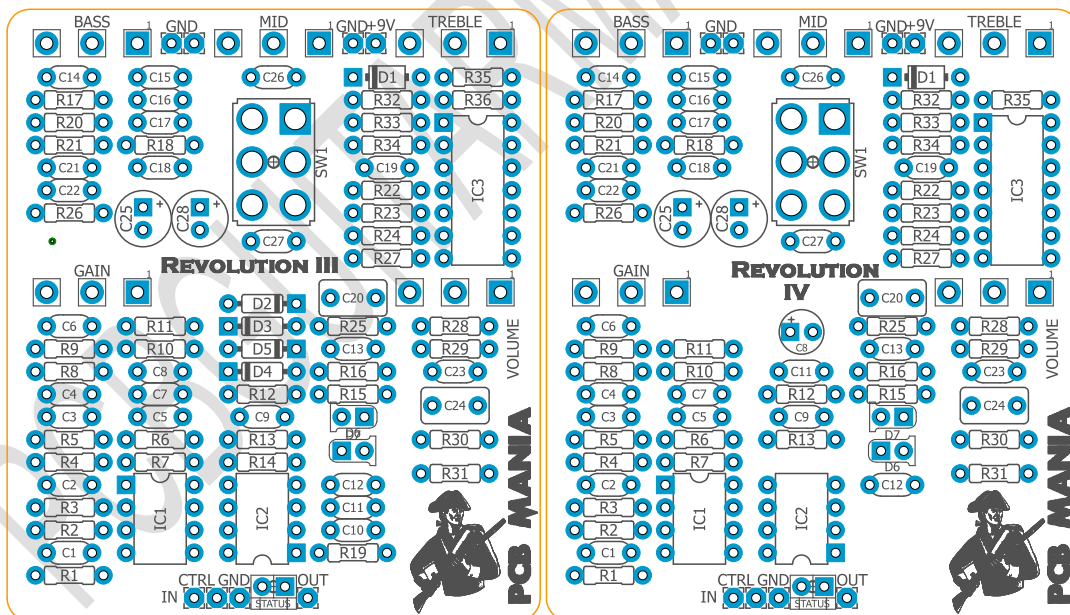
[Das Musikding \(Europe\)](#)

Project overview:

Modern high gain drive, that's what the Revv G3 & G4™ pedals are known for. This is your chance to build your own version of this insane preamps in a box. Accurate OpAmps emulations of the purple and the red channel from the Generator tube head.

There is no need to tell you how good this things sound. You can find plenty of insane videos on YouTube, if you do not know them yet. After trying it you will find why has been chosen as the best pedal of 2018 by multiple specialized media.

The only question is, which side are you going to take on the High gain Revolution? Are you on the White (G4) or in the Black team (G3)? Both are gain beasts that for sure will satisfy your extreme gain desires!



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Introduction

For this pedal we can say that it's clearly an amazing conversion of the original Revv Generator Tube Amp, where you can see a pretty similar schematic to the ones present here. This is possible using the same principle of Tube-to-Jfet we have seen in many of the modern high gain pedals such as the Friedman Be-OD, or our Wolfgang 5150.

As you can see both pedals look very similar, not only by the controls, but also by the components and the schematic, however they sound pretty different, being definitely complementary of each other. In the words of Revv, "if the G3 is a scalpel, the G4 is a sledgehammer."

The Revolution III it's about clarity, punch, & precision. The Revolution IV is more about a thick, saturated distortion. Both can be totally complementary to each other, that's why this pack includes for free an extra order switch, so you can place them both in the same enclosure as your own portable preamp and play it everywhere!

Going back to the circuit analysis, one of the most interesting things about is the 3-Band hybrid EQ, composed by a Baxandall control for bass and treble, plus an active mid control after volume, making sure that you can dial this pedal in any way you want it, yet keep on the definition you need on each frequency.

Both pedals features an aggression switch that engages different settings of resistors and capacitors to change how the gain on the first stage behaves. Although you must notice that this pedal might squeal on with the aggression switch engage and the gain knob over 75%, but we can assure you, you'd have plenty of gain by then.

This board has been designed featuring a special grill for the ground net in order to keep all the unwanted noises as low as possible.

Controls

- Gain
- Volume
- Bass
- Treble
- Mids
- Aggression Switch

Revolution III - BOM

Resistors	
Part	Value
R1	1m
R2	470k
R3	10k
R4	47k
R5	82k
R6	33k
R7	10k
R8	33k
R9	10k
R10	33k
R11	56K
R12	22k
R13	56K
R14	4k7
R15	4k7
R16	56k
R17	82k
R18	2k
R19	82k
R20	4k7
R21	100k
R22	470k
R23	22k
R24	22k
R25	150k
R26	10k
R27	1k5
R28	470k
R29	10k
R30	2k
R31	4k7
R32	10R
R33	20K
R34	20K
R35	1K5
R36	1K5

Capacitors	
Part	Value
C1	22n
C2	100p
C3	2n2
C4	2n2
C5	1n
C6	220nf
C7	100pf
C8	22n
C9	100p
C10	100pf
C11	22n
C12	10n
C13	4n7
C14	47n
C15	100n
C16	4n7
C17	47n
C18	47n
C19	2n2
C20	220nf
C21	10n
C22	10n
C23	100p
C24	220nf
C26	100n
C27	100n

Switches	
Part	Value
SW1	DPDT ON-ON

Electrolytics Capacitors	
Part	Value
C25	100u
C28	22u

Potentiometers	
Part	Value
BASS	A100K
GAIN	B1M
MID	B100k
TREBLE	A50k
VOLUME	A50k

IC	
Part	Value
IC1	TL072
IC2	TL072
IC3	TL074

Diodes	
Part	Value
D1	1N5817
D2	1n4148
D3	1n4148
D4	1n4148
D5	1n4148
D6	3mm red led
D7	3mm red led
Status	3mm red led

Revolution III - Shopping list

Resistors		
Qty	Value	Parts
1	100k	R21
1	10R	R32
5	10k	R3, R7, R9, R26, R29
1	150k	R25
2	1K5	R35, R36
1	1k5	R27
1	1m	R1
2	20K	R33, R34
3	22k	R12, R23, R24
2	2k	R18, R30
3	33k	R6, R8, R10
3	470k	R2, R22, R28
1	47k	R4
4	4k7	R14, R15, R20, R31
2	56K	R11, R13
1	56k	R16
3	82k	R5, R17, R19

Electrolytics Capacitors		
Qty	Value	Parts
1	100u	C25
1	22u	C28

IC		
Qty	Value	Parts
2	TL072	IC1, IC2
1	TL074	IC3

Capacitors		
Qty	Value	Parts
3	100n	C15, C26, C27
3	100p	C2, C9, C23
2	100pf	C7, C10
3	10n	C12, C21, C22
1	1n	C5
1	220nf	C6
2	220nf	C20, C24
3	22n	C1, C8, C11
3	2n2	C3, C4, C19
3	47n	C14, C17, C18
2	4n7	C13, C16

Potentiometers		
Qty	Value	Parts
1	A100K	BASS
2	A50k	TREBLE, VOLUME
1	B100k	MID
1	B1M	GAIN

Switches		
Qty	Value	Parts
1	DPDT ON-ON	SW1

Diodes		
Qty	Value	Parts
1	1N5817	D1
4	1n4148	D2, D3, D4, D5
3	3mm red led	D6, D7, Status

Revolution IV - BOM

Resistors	
Part	Value
R1	1m
R2	470k
R3	10k
R4	47k
R5	82k
R6	33k
R7	10k
R8	33k
R9	10k
R10	33k
R11	56K
R12	10k
R13	150k
R15	4k7
R16	56k
R17	100k
R18	2k
R20	4k7
R21	100k
R22	470k
R23	10k
R24	22k
R25	1m
R26	10k
R27	1k5
R28	470k
R29	10k
R30	2k
R31	4k7
R32	10R
R33	20K
R34	20K
R35	1K5

Capacitors	
Part	Value
C1	22n
C2	100p
C3	4n7
C4	2n2
C5	1n
C6	220nf
C7	100pf
C9	100p
C11	22n
C12	10n
C13	1n
C14	47n
C15	100n
C16	4n7
C17	47n
C18	47n
C19	2n2
C20	220nf
C21	10n
C22	10n
C23	100p
C24	220nf
C26	100n
C27	100n

Electrolytics Capacitors	
Part	Value
C8	4u7
C25	100u
C28	22u

Potentiometers	
Part	Value
BASS	A100K
GAIN	B1M
MID	B100k
TREBLE	A50k
VOLUME	A50k

IC	
Part	Value
IC1	TL072
IC2	TL072
IC3	TL074

Switches	
Part	Value
SW1	DPDT ON-OFF- ON

Diodes	
Part	Value
D1	1N5817
D6	RED LED 3MM
D7	RED LED 3MM
Status	RED LED 3MM

Revolution IV - Shopping list

Resistors		
Qty	Value	Parts
2	100k	R17, R21
1	10R	R32
7	10k	R3, R7, R9, R12, R23, R26, R29
1	150k	R13
1	1K5	R35
1	1k5	R27
2	1m	R1, R25
2	20K	R33, R34
1	22k	R24
2	2k	R18, R30
3	33k	R6, R8, R10
3	470k	R2, R22, R28
1	47k	R4
3	4k7	R15, R20, R31
1	56K	R11
1	56k	R16
1	82k	R5

Capacitors		
Qty	Value	Parts
3	100n	C15, C26, C27
3	100p	C2, C9, C23
1	100pf	C7
3	10n	C12, C21, C22
2	1n	C5, C13
1	220nf	C6
2	220nf	C20, C24
2	22n	C1, C11
2	2n2	C4, C19
3	47n	C14, C17, C18
2	4n7	C3, C16

Electrolytics Capacitors		
Qty	Value	Parts
1	100u	C25
1	22u	C28
1	4u7	C8

Potentiometers		
Qty	Value	Parts
1	A100K	BASS
2	A50k	TREBLE, VOLUME
1	B100k	MID
1	B1M	GAIN

IC		
Qty	Value	Parts
2	TL072	IC1, IC2
1	TL074	IC3

Switches		
Qty	Value	Parts
1	DPDT ON-OFF-ON	SW1

Diodes		
Qty	Value	Parts
1	1N5817	D1
3	RED LED 3MM	D6, D7, Status

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.

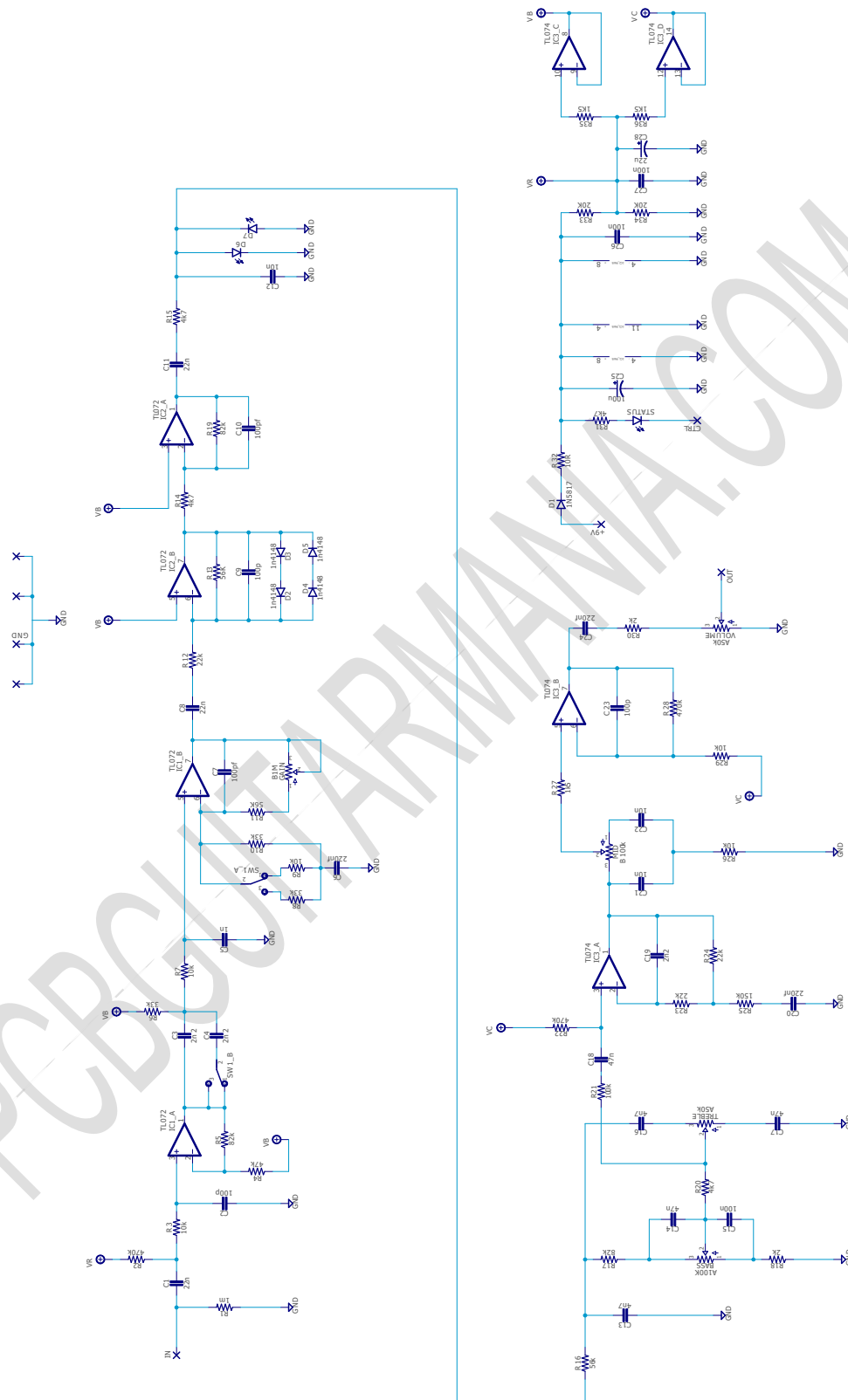
Build Notes

If this is one of your first projects I recommend you to take a look on our [Pedal Building Guide](#)

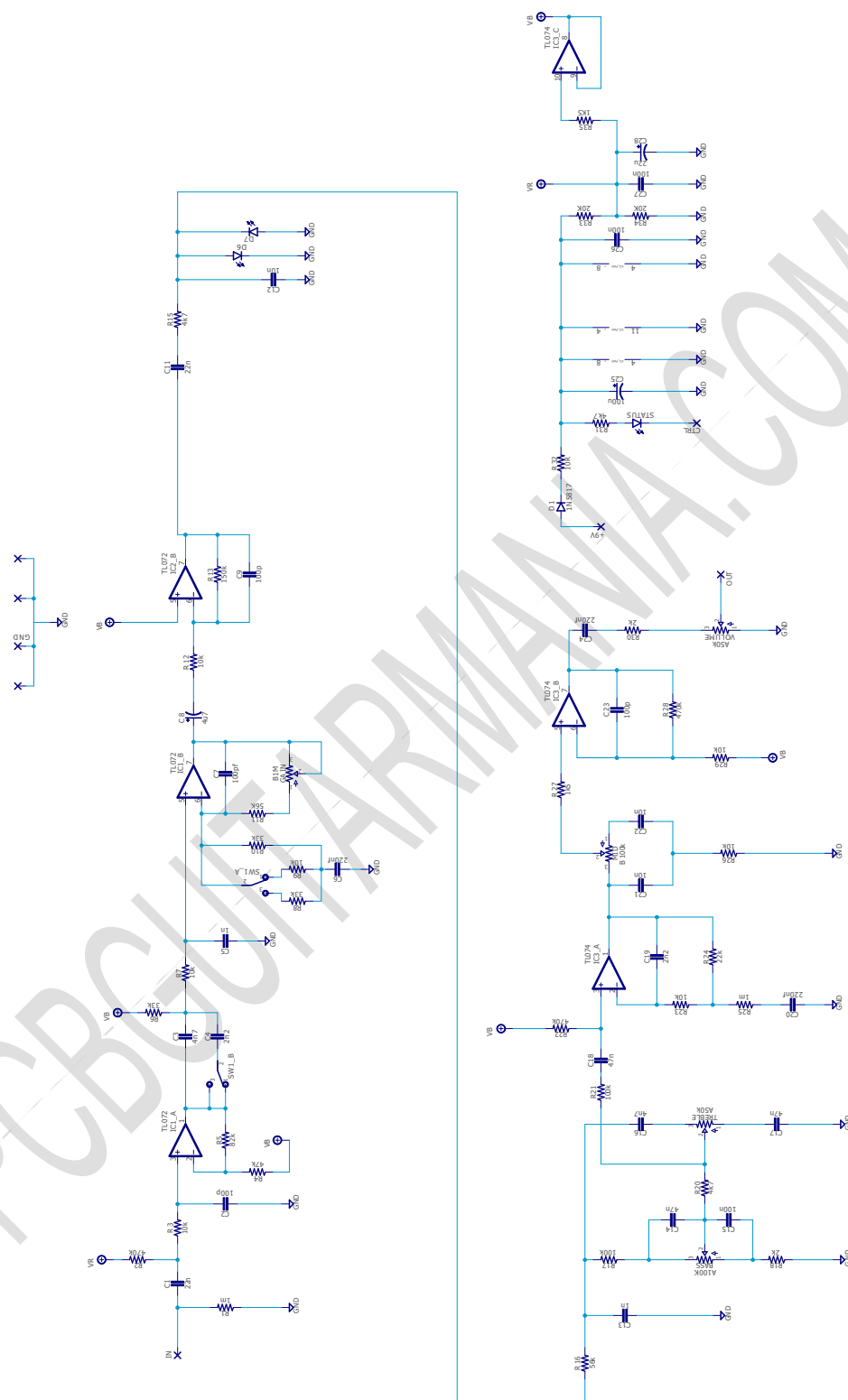
For a successful and tidy build it's recommended the following order:

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

Revolution III - Schematic



Revolution IV - Schematic



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](#)

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

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!

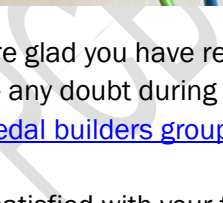
All of our projects have been tested following this same guide on their standard configurations. Although, not all of the variations and mods have necessarily been tested. These are suggestions based on the schematic analysis, and on the experiences and opinions of others. Feel free to share with us 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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