

Universal Revolution SMD

Based on:

Revv G2, G3 & G4™

Effect type:

High gain Preamp

Build difficult:

Intermediate

Amount of parts:

Intermediate Rev II (31 parts),
Rev III (35 parts), Rev IV (31 parts)

Technology:

Dual OpAmp

Power consumption:

9V

Enclosure type:

125b

Get your board at:

[Universal Revolution SMD](#)

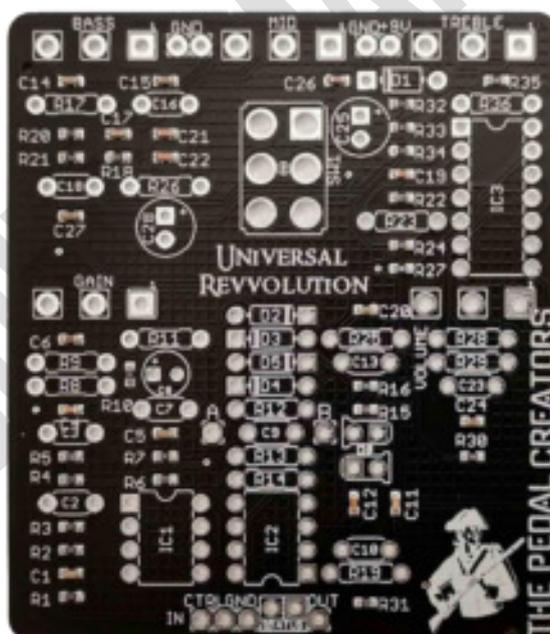
Get your kit at:

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

Project overview:

When I say high gain REVolution you know what I'm talking about. With the Universal revolutions SMD, you can choose which of the three suits you the most and then build it in an easy, fast and fun way. More advanced user can craft their unique version by experimenting with the values and sections of each of the previous revs. Please make sure you understand this build by reading the information on the building notes.

Enjoy any of these insane preamps in a box! Once you try one, you will want to have the other two.



About The Pedal Creators

Everyone can build excellent boutique guitar **pedals**.

Everything **we do** is to make that **experience** more accessible and **user-friendlier**.

The **Pedal Creators** series are the **best and easiest to build PCBs** ever. Including most **resistors** and **capacitors** already **soldered** on board as SMD components, leaving the key values for you to **experiment** and craft **your own tone**.

Now you can **build** a pedal you are **proud** of in **less than an hour** without any previous experience.

What are you waiting for to **become a Pedal Creator**?

The Pedal creators - key features:

- **Easy to build**, no previous experience required. It's like Lego for musicians.
- **Fast assembly** finish a pedal in less than an hour. Play your favorite record and enjoy the ride along.
- **100% mistake-proof**. Even my grandma can build one while she cooks.
- **Build** your own boutique pedal. Experiment with different values and make the **pedal you always dreamed of**.
- Easy to scale. **Turn your passion into a money-making machine**.

Index

- | | |
|------------------------------------|--|
| 1. Project overview | 6. Schematic |
| 2. About The Pedal Creators, Index | 7. Components recommendations, Build Notes, Wiring Diagram |
| 3. Introduction & Controls | 8. Drilling Template, Licensing and Usage |
| 4. Bill of materials | |
| 5. Shopping list | |

Introduction

Revolution II

Of the series, The Revolution II is supposed to be the pedal with the lowest amount of gain for everything from slight grit to hard rock. But don't get confused by that; when cranking the volume and the gain, it's still pretty hot and can make some metal guys out there happy. Well, at least it makes me very happy, and I could crank it without getting oscillation or the need to add a buffer before getting rid of that.

Build the Revv II if you want a sound that's both warm and transparent, able to embellish the sound of your guitar while respecting its identity.

Personally, it's the one I expected the less from what I heard before in demos and surprised me the most once I had it in my hands. Both dynamic and open, this pedal provides you with a lot of useful tones.

Revolution III & IV

Both pedals look very similar, not only by the controls but also by the components and the schematic; though they sound pretty different, they complement 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. However, when you try them tougher, you can see how good they blend.

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, it makes sure that you can dial this pedal in any way you want it yet keeping on the definition you need on each frequency.

Both pedals feature 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%, we can assure you; you'd have plenty of gain by then.

Controls

- DISTORTION
- HIGH
- LOW
- MID
- VOLUME
- AGGRESSION SWITCH

Universal Revolution - Bill of materials

Resistors	Revolution II	Revolution III	Revolution IV
Part	Value		
R8	82k	33k	33k
R9	22k	10k	10k
R11	56K*	56K*	56K*
R12	10k	22k	10k
R13	22k	56K	150k
R14	-	4k7	-
R17	-	82k	100k
R19	-	82k	-
R23	10k	22k	10k
R25	1m	150k	1m
R26	22k	10k	10k
R28	470k**	470k**	470k**
R29	15k	10k	10k
R36	-	1K5	-

Capacitors	Revolution II	Revolution III	Revolution IV
Part	Value		
C2	47p	100p	100p
C3	4n7	2n2	4n7
C7	120p	100pf	100pf
C8	-	22n	-
C9	120p	100p	100p
C10	-	100pf	-
C13	1n	4n7	1n
C16	2n2	4n7	4n7
C18	10n	47n	47n
C23	47p	100p	100p

Electrolytics Capacitors	Revolution II	Revolution III	Revolution IV
Part	Value		
C8	4u7	-	4u7
C25	100u	100u	100u
C28	22u	22u	22u

Switches	Revolution II	Revolution III	Revolution IV
Part	Value		
SW1	DPDT ON-OFF-ON	DPDT ON-OFF-ON	DPDT ON-OFF-ON

Potentiometers	Revolution II	Revolution III	Revolution IV
Part	Value		
BASS	A100K	A100K	A100K
GAIN	B1M	B1M	B1M
MID	B100k	B100k	B100k
TREBLE	A50k	A50k	A50k
VOLUME	A50k	A50k	A50k

IC	Revolution II	Revolution III	Revolution IV
Part	Value		
IC1	TL072	TL072	TL072
IC2	TL072	TL072	TL072
IC3	TL074	TL074	TL074

Diodes	Revolution II	Revolution III	Revolution IV
Part	Value		
D1	1N5817	1N5817	1N5817
D2	-	1n4148	-
D3	-	1n4148	-
D4	-	1n4148	-
D5	-	1n4148	-
D6	3mm red led	3mm red led	3mm red led
D7	3mm red led	3mm red led	3mm red led
Status	3mm red led	3mm red led	3mm red led

PCBGUITARMANIA.COM

Revolution II - Shopping List

Resistors		
Qty	Value	Parts
3	22k	R9, R13, R26
1	1m	R25
2	10k	R12, R23
1	82k	R8
1	470k	R28**
1	56K	R11*
1	15k	R29

Capacitors		
Qty	Value	Parts
2	47p	C2, C23
2	120pf	C7, C9
1	1n	C13
1	4n7	C3
1	10n	C18
1	2n2	C16

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

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

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

Diodes		
Qty	Value	Parts
1	1N5817	D1
3	3mm red led	D6, D7, Status

Revolution III - Shopping List

Resistors		
Qty	Value	Parts
1	33k	R8
3	10k	R9, R26, R29
2	56K	R11*, R13
2	22k	R12, R23
1	4k7	R14
2	82k	R17, R19
1	150k	R25
1	470k	R28**
1	1k5	R36

Capacitors		
Qty	Value	Parts
1	47n	C18
1	2n2	C3
5	100pf	C2, C7, C9, C10, C23
1	22n	C8
2	4n7	C13, C16

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

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

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

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

Revolution VI - Shopping List

Resistors		
Qty	Value	Parts
1	150k	R13
1	1m	R25
5	10k	R9, R12, R23, R26, R29
1	33k	R8
1	470k	R28**
1	56K	R11*
1	100k	R17

Capacitors		
Qty	Value	Parts
2	100p	C2, C23
2	4n7	C3, C16
2	100pf	C7, C9
1	1n	C13
1	47n	C18

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

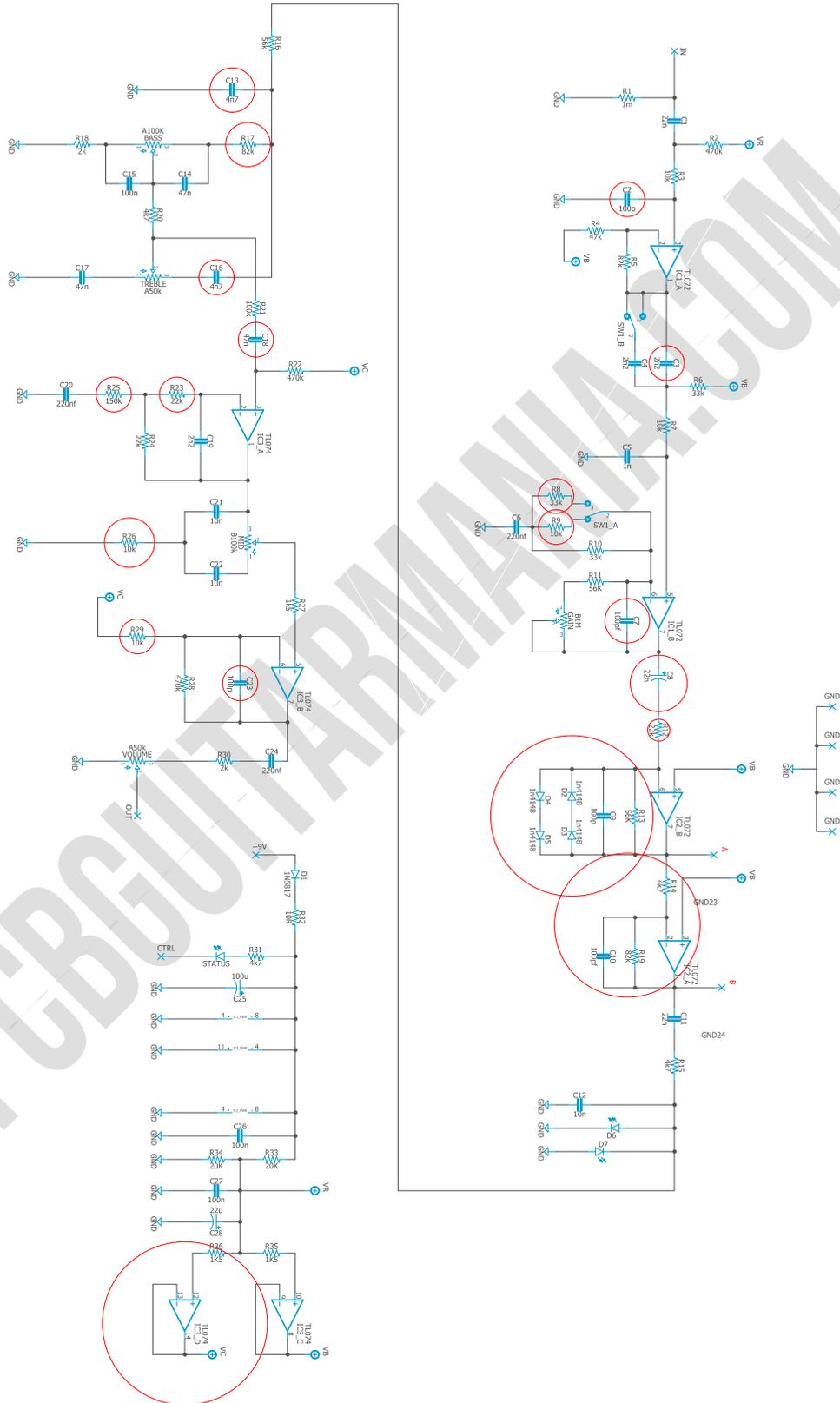
Switches		
Qty	Value	Parts
1	DPDT ON-OFF-ON	SW1

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

Diodes		
Qty	Value	Parts
1	1N5817	D1
3	3mm red led	D6, D7, Status

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](#).

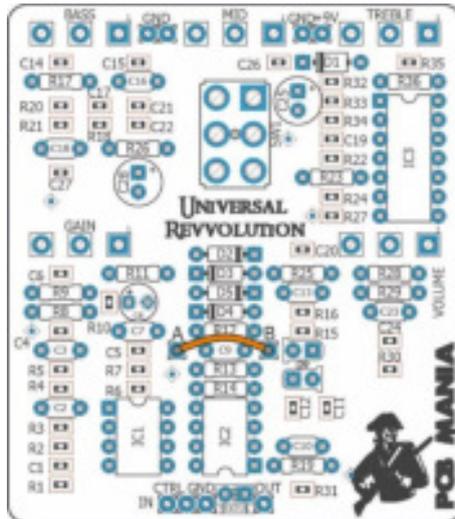
For a successful and tidy build, it's recommended the following order:

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

- **R11*** and **R28****

You can change the value of both resistors to make the gain lower or higher.

- In the Bill of Materials, - in a value means no component needed.
- Values in red in the schematic are the ones that change depending on the model; the rest is the same for all the revs.
- In both **Revolution II** and **Revolution IV** make a jumper in **A** to **B** sections as indicated in the schematic and the image below:



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.

Follow us on [Instagram](#) and [Facebook](#) to stay in tune with the latest projects!

PCBGUITARMANIA.COM