

# Überknall

## Based on:

Bogner Überschall Tube amp

## Effect type:

High gain PreAmp

## Build difficult:

Average

## Amount of parts:

Low, total 57 components

## Technology:

Opamp Frequency response emulation

## Power consumption:

9V

## Enclosure type:

125b

## Get your board at:

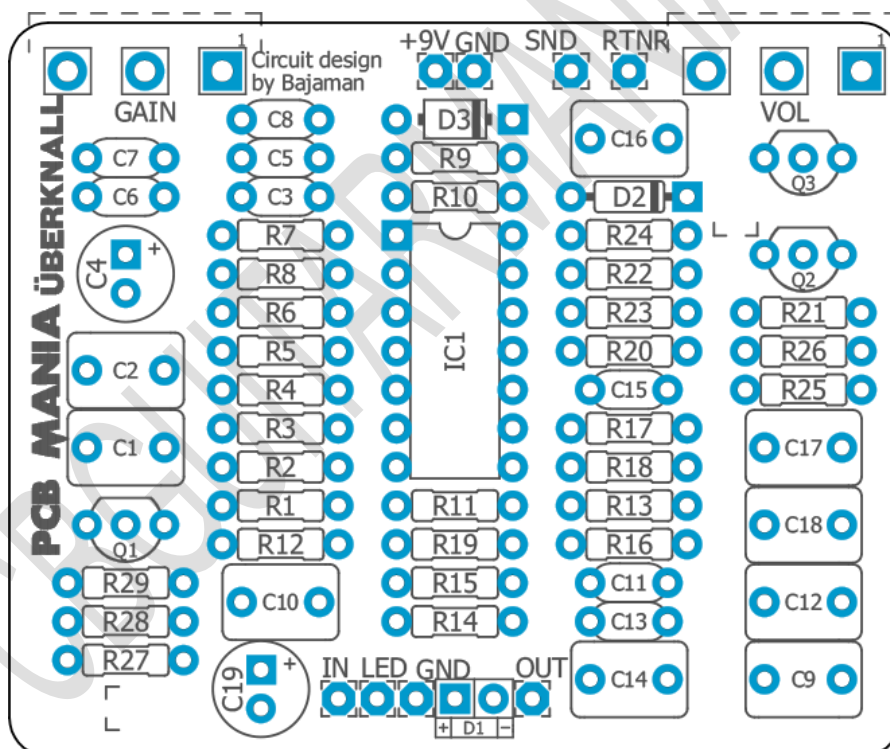
[Überknall](#)

## Get your kit at:

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

## Project overview:

Based on the frequency response of the Bogner Überschall. Part of the series 'Develop your own Preamp' where you can combine preamp sections of iconic amplifiers with different types of eqs in order to create your own custom boutique pedal. [More information about the EQ sections here.](#)



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## Introduction

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As you may know from our other Preamp projects Designed by Bajaman we love his circuits, the authenticity of the sound compared to the real amps, the response, the air they moving or the charme they bring depending on the model and well... this time he deigned one that will smash you to the ground, eat you alive and spit you back out before you maxed out the gain. Actually even I'm surprised, that he did this monstrous metal beast based on the fantastic Bogner Überschall™ Tube Head. That one is, as far as my knowledge goes, the most brutal amp out there. Believe me, I tried them all. Even the Diezel VH4™ was just designed because Peter Diezel was so flashed by this amp that he wanted to build something similar in brutality and sound.

If you're looking for super heavy metal tones, you are right here. This version comes with only volume and gain knob to give you the most accurate tone you can get. (no worries your amp has a EQ you can use. If you want to use it in the return of your FX loop - we got you covered with passive and active EQ boards as well.) If you are looking for a Rock´n´Roll Drive, pass this one, you will not tame it. We have other Bogner projects on the way, but this one is not in the mood to take prisoners.

## Controls

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- Gain
- Level
- Send & return pads to attach an external EQ

# Bill of materials

Resistors	
Part	Value
R1	1M5
R2	1M
R3	10K
R4	470K
R5	6K8
R6	1K8
R7	2K7
R8	1K5
R9	10K
R10	10K
R11	2K7
R12	1K
R13	1K
R14	4K7
R15	6K8
R16	6K8
R17	820R
R18	2K7
R19	1K
R20	10K
R21	10K
R22	2K7
R23	1K
R24	2K2
R25	1M
R26	10K
R27	4K7
R28	10K
R29	10K

Electrolytics Capacitors	
Part	Value
C4	2u2
C19	220u

Potentiometers	
Part	Value
GAIN	B100K

VOL	B100K
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Capacitors	
Part	Value
C1	1u
C2	1u
C3	22n
C5	10n
C6	4n7
C7	100n
C8	560p
C9	1u
C10	1u
C11	2n2
C12	1u
C13	39n
C14	1u
C15	3n9
C16	1u
C17	1u
C18	1u

Trim pots	
Part	Value
IC1	TL064

Transistors	
Part	Value
Q1	J201
Q2	J201
Q3	BC547B

Diodes	
Part	Value
D1	3mm LED
D2	1N4148
D3	1n5817

# Shopping list

Resistors		
Qty	Value	Parts
8	10K	R3, R9, R10, R20, R21, R26, R28, R29
4	1K	R12, R13, R19, R23
1	1K5	R8
1	1K8	R6
2	1M	R2, R25
1	1M5	R1
1	2K2	R24
4	2K7	R7, R11, R18, R22
1	470K	R4
2	4K7	R14, R27
3	6K8	R5, R15, R16
1	820R	R17

Electrolytics Capacitors		
Qty	Value	Parts
1	220u	C19
1	2u2	C4

Potentiometers		
Qty	Value	Parts
2	B100K	GAIN, VOL

Capacitors		
Qty	Value	Parts
1	100n	C7
1	10n	C5
9	1u	C1, C2, C9, C10, C12, C14, C16, C17, C18
1	22n	C3
1	2n2	C11
1	39n	C13
1	3n9	C15
1	4n7	C6
1	560p	C8

IC		
Qty	Value	Parts
1	TL074	IC1

Transistors		
Qty	Value	Parts
1	BC547B	Q3
2	J201	Q1, Q2
2	SST201	QQ1, QQ2

Diodes		
Qty	Value	Parts
1	1N4148	D3
1	3mm LED	D2
1	1N5817	D1

# Components Recommendations

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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

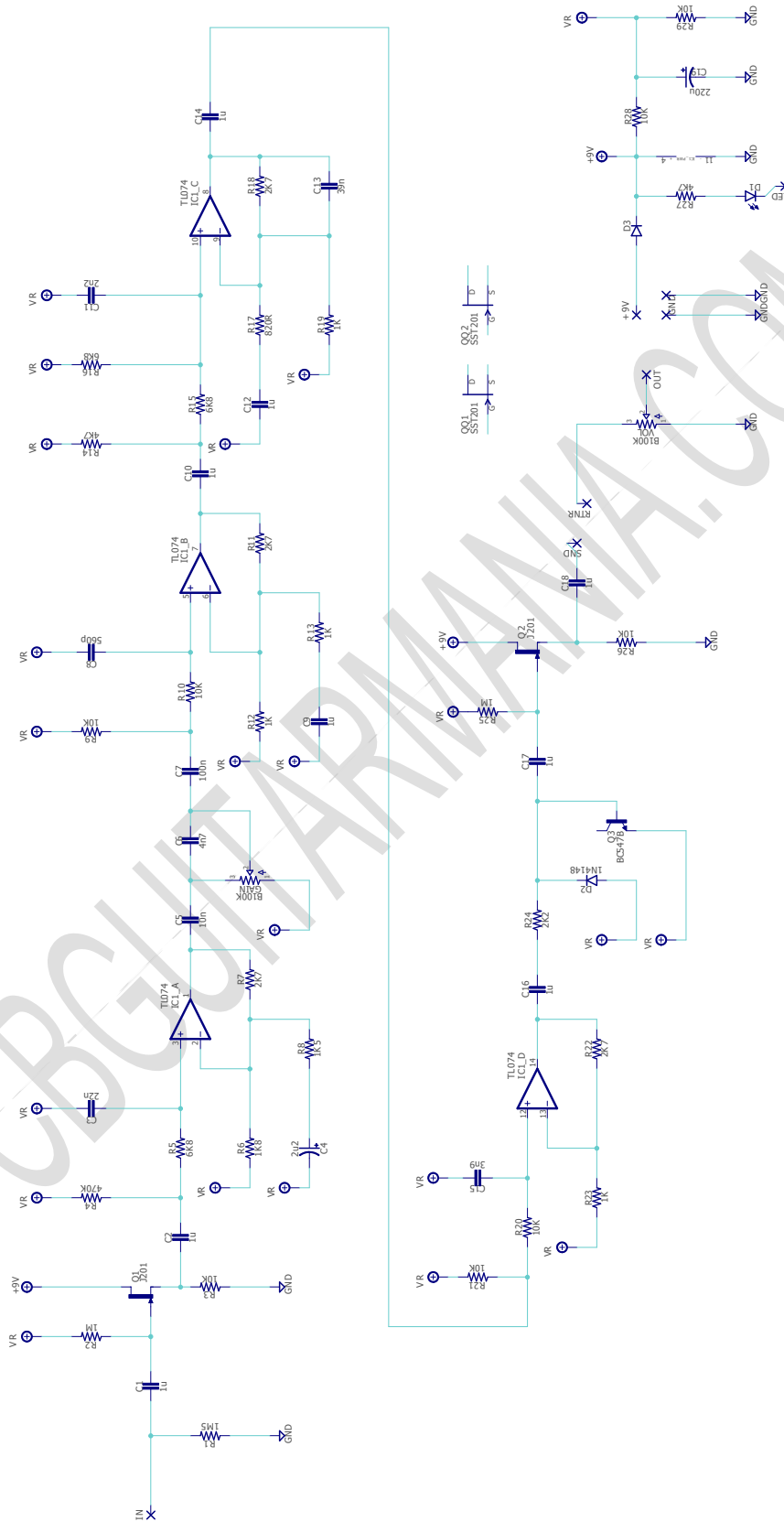
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If this is one of your first projects I recommend you to take a look on our [Pedal Building Guide](#)

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

# Schematic



# Wiring Diagram

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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

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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 in an A4 page.

# Licensing and Usage

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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.

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