Mongol Device

Based on:
EQD Bows

Number of parts:
Low, total 18 components

Enclosure type:
125b

Effect type:
Preamp boost

Technology:
Vintage germanium transistor

Get your board at:
Mongol Device

Build difficult:
Easy

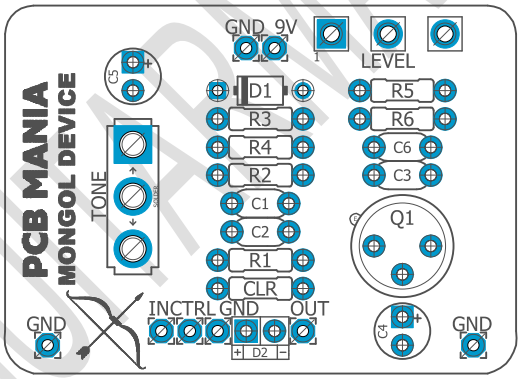
Power consumption:
9V

Get your kit at:
Das Musikding (Europe)

Project overview:

Inspired by the popular EQD BOWS pedal, a simple but powerful preamp/booster circuit built around a rare germanium transistor, delivering a rich, harmonic overdrive with tons of character. The single gain knob and two-position switch are like adjusting the tension on the bowstring, allowing you to fine-tune your sound and hit the bullseye every time.

Build the Mongol Device, and you'll be riding the steppes of sound in no time!



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Introduction

The Mongol Device is an easy-to-build, straightforward preamp/booster pedal with just one knob and a two-position switch. With two different modes, Full and Treble, you have the flexibility to shape your tone to your liking.

In Full mode, you'll get a rich and warm sound with plenty of body and low end. Meanwhile, Treble mode is a resonant booster that can add a biting edge to your sound. With a "cocked wah" tone, it can drive any tube amp into a realm of harmonic-rich distortion.

If you use the Mongol Device with a drive pedal in front of it, the possibilities are endless. In Full mode, your dirt signal will turn into a powerful wall of sonic chaos. In Treble mode, you'll have the ultimate lead tone at your fingertips.

So, assemble your own Mongol Device, join the horde, and embark on a quest to conquer new musical frontiers!

Controls

Potentiometers

- Level

Switches

- Tone

Bill of materials

Resistors	
Part	**Value**
CLR	4K7
R1	1M
R2	10K
R3	470K
R4	68K
R5	100R
R6	1M

Capacitors	
Part	**Value**
C1	100n
C2	4n7
C3	100n
C6	100n

Electrolytic Capacitors	
Part	**Value**
C4	47u
C5	100u

Potentiometers	
Part	**Value**
LEVEL	B10K

Transistors	
Part	**Value**
Q1	OC139

Switches	
Part	**Value**
TONE	SPDT ON-ON

Diodes	
Part	**Value**
D1	1N5817
D2	3mm red LED

Shopping list

Resistors		
Qty	**Value**	**Parts**
1	100R	R5
1	10K	R2
2	1M	R1, R6
1	470K	R3
1	4K7	CLR
1	68K	R4

Capacitors		
Qty	**Value**	**Parts**
3	100n	C1, C3, C6
1	4n7	C2

Electrolytic Capacitors		
Qty	**Value**	**Parts**
1	47u	C4
1	100u	C5

Potentiometers		
Qty	**Value**	**Parts**
1	B10K	LEVEL

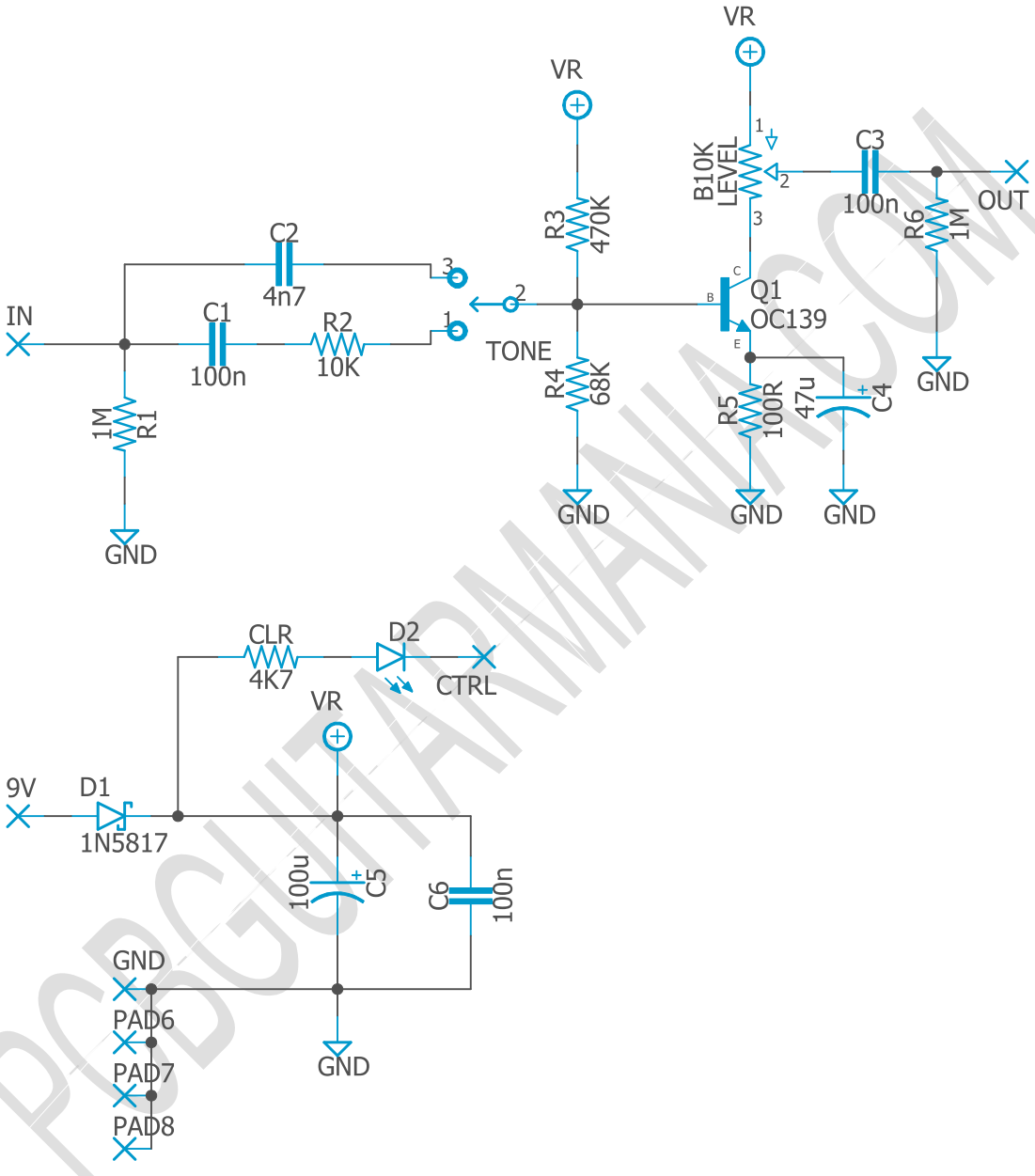
Transistors		
Qty	**Value**	**Parts**
1	OC139	Q1

Switches		
Qty	**Value**	**Parts**
1	SPDT ON-ON	TONE
1	3PDT Stomp foot	-

Diodes		
Qty	**Value**	**Parts**
1	1N5817	D1
1	3mm red LED	D2

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

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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