Lemon Rockverb

Based on:
Orange Rockerverb

Effect type:
High gain preamp

Build difficult:
Intermediate

Amount of parts:
Average, total 45 components

Technology:
JFET transistors

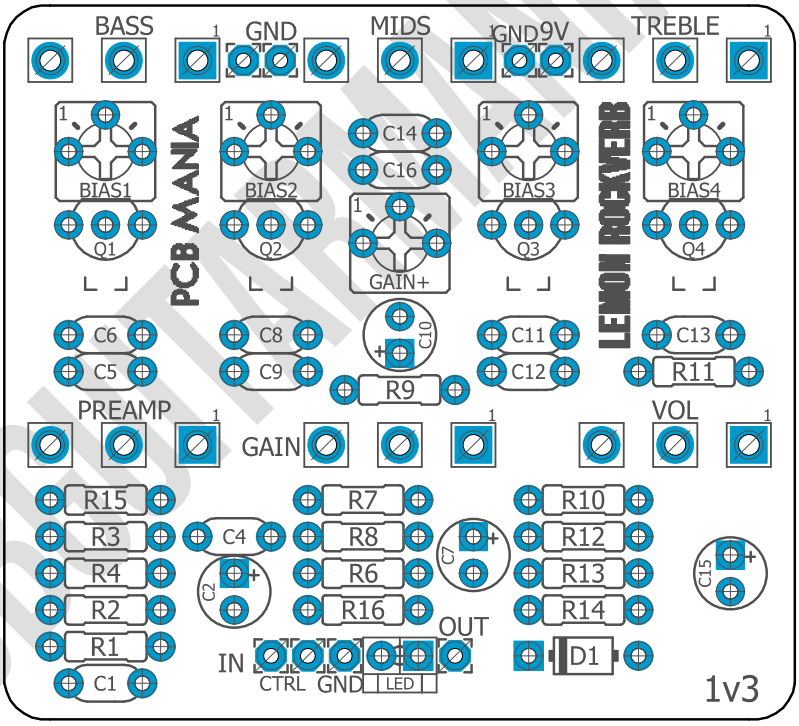
Power consumption:
9V

Enclosure type:
125b

Get your board at:
Lemon Rockverb

Get your kit at:
Das Musikding (Europe)

Project overview:
The Lemon Rockververb is an exclusive original design by PCB Mania, inspired by Orange Rockerverb, replacing the tubes for JFET to make it pedal-friendly.



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Introduction

The Orange Rockerverb was initially developed a decade ago and got released by 2004 as the first high gain tube head by the British company in response to the need for extra gain from the modern players. But that is not what gives this marvelous preamp exclusively valuable for metal players; what makes this bad boy truly special is its versatile workhorse that will take you anywhere from classic British crunch to the very heaviest in modern metal.

Remember, this project requires sourcing some good quality JFET from trusted sources for proper functioning. We always recommend using SMD JFET as their reliability is far superior to the discontinued through-hole counterpart. Also, bear in mind this project requires bias the transistors correctly with the respective trim pots.

To do this correctly, plug the pedal into your 9v power supply/battery, grab your multimeter and plug the black terminal into any ground of the circuit. Simultaneously, with the read touch, the Drain legs of your transistors, if it's done correctly, should appear how much voltage is receiving that leg.

Now turn the trimpot with a screwdriver till you can read 4.5v- or half of your power supply; in case you are using 18v- on the screen of your multimeter. Repeat this process with all transistors and their respective trimpots till all of them are measuring 4.5v, then proceed to do fine-tuning by ear on what you hear are the best settings of each transistor.

Don't forget to share your favorite bias settings and pictures of your build on our Facebook group!

Controls

- Bass
- Gain
- Mids
- Preamp
- Treble
- Vol

Bill of materials

Resistors	
Part	**Value**
R1	68k
R2	1k5
R3	220k
R4	220k
R5	47r
R6	1k
R7	220k
R8	470k
R9	2k2
R10	470k
R11	220k
R12	1k5
R13	39k
R14	4k7
R15*	1m

Capacitors	
Part	**Value**
C1	220n
C3	Empty
C4	1n
C5	470p
C6	100p
C8	100p
C9	2n2
C11	100pf
C12	4n7
C13	560p
C14	22n
C16	22n

Electrolytics Capacitors	
Part	**Value**
C2	10u
C7	10u
C10	10u
C15	100u

Potentiometers	
Part	**Value**
BASS	500k A
GAIN	1M A
MIDS	25k B
PREAMP	1M A
TREBLE	250k B
VOL	500k A

Trimpots	
Part	**Value**
BIAS1	100k
BIAS2	100k
BIAS3	100k
BIAS4	100k
GAIN+	1M A

Transistors	
Part	**Value**
Q1	J201
Q2	J201
Q3	J201
Q4	J201

Diodes	
Part	**Value**
D1	1n5817
LED	3mm red LED

Shopping list

Resistors		
Qty	**Value**	**Parts**
1	1k	R6
2	1k5	R2, R12
4	220k	R3, R4, R7, R11
1	2k2	R9
1	39k	R13
2	470k	R8, R10
1	47r	R5
1	4k7	R14
1	68k	R1
1	1m	**15***

Capacitors		
Qty	**Value**	**Parts**
2	100p	C6, C8
1	100pf	C11
1	1n	C4
1	220n	C1
2	22n	C14, C16
1	2n2	C9
1	470p	C5
1	4n7	C12
1	560p	C13
1	Empty	C3

Electrolytics Capacitors		
Qty	**Value**	**Parts**
1	100u	C15
3	10u	C2, C7, C10

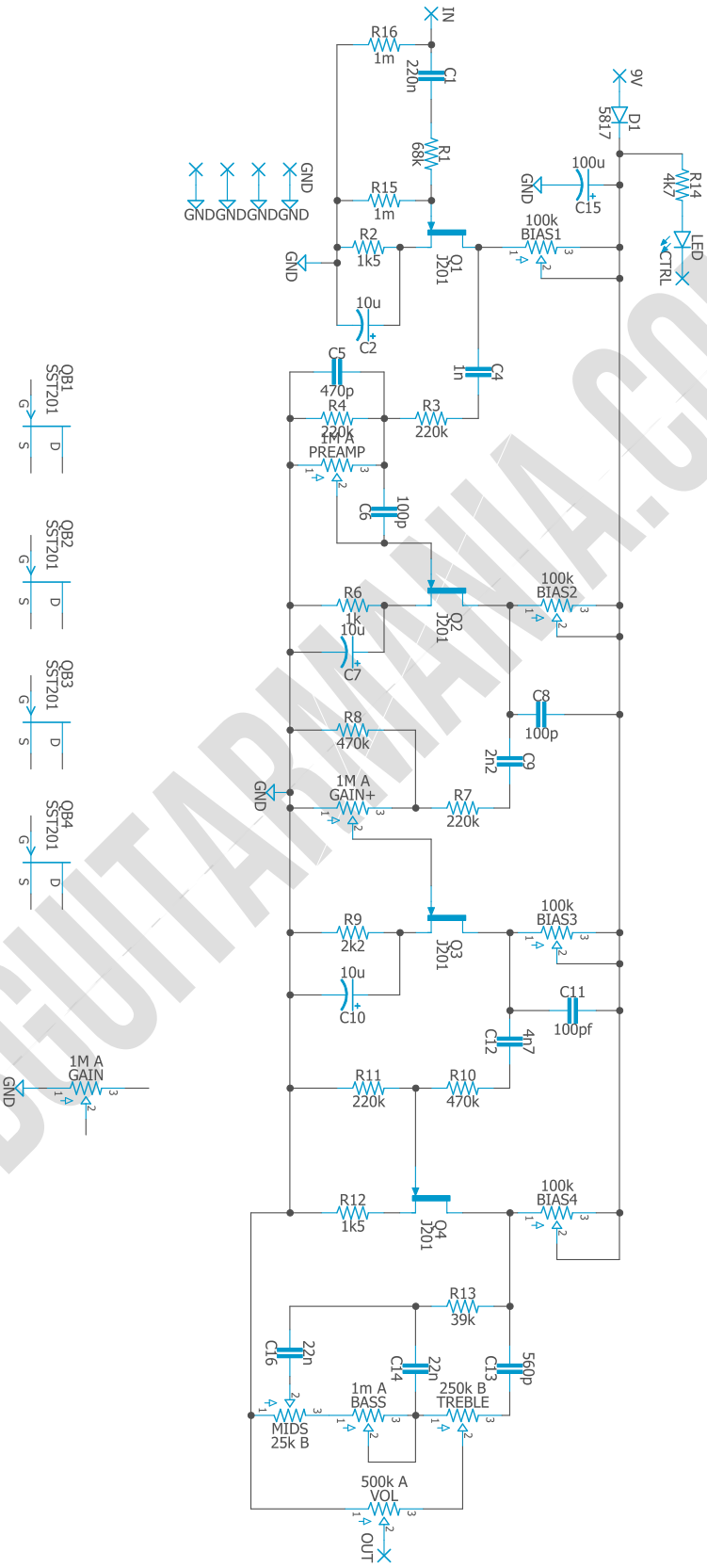
Potentiometers		
Qty	**Value**	**Parts**
2	1M A	GAIN, PREAMP
1	250k B	TREBLE
1	25k B	MIDS
2	500k A	BASS, VOL

Trimpots		
Qty	**Value**	**Parts**
4	100K	BIAS1, BIAS2, BIAS3, BIAS4
1	1M A	GAIN+

Transistors		
Qty	**Value**	**Parts**
4	J201	Q1, Q2, Q3, Q4

Diodes		
Qty	**Value**	**Parts**
1	1n5817	D1
1	3mm red LED	LED

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.

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.

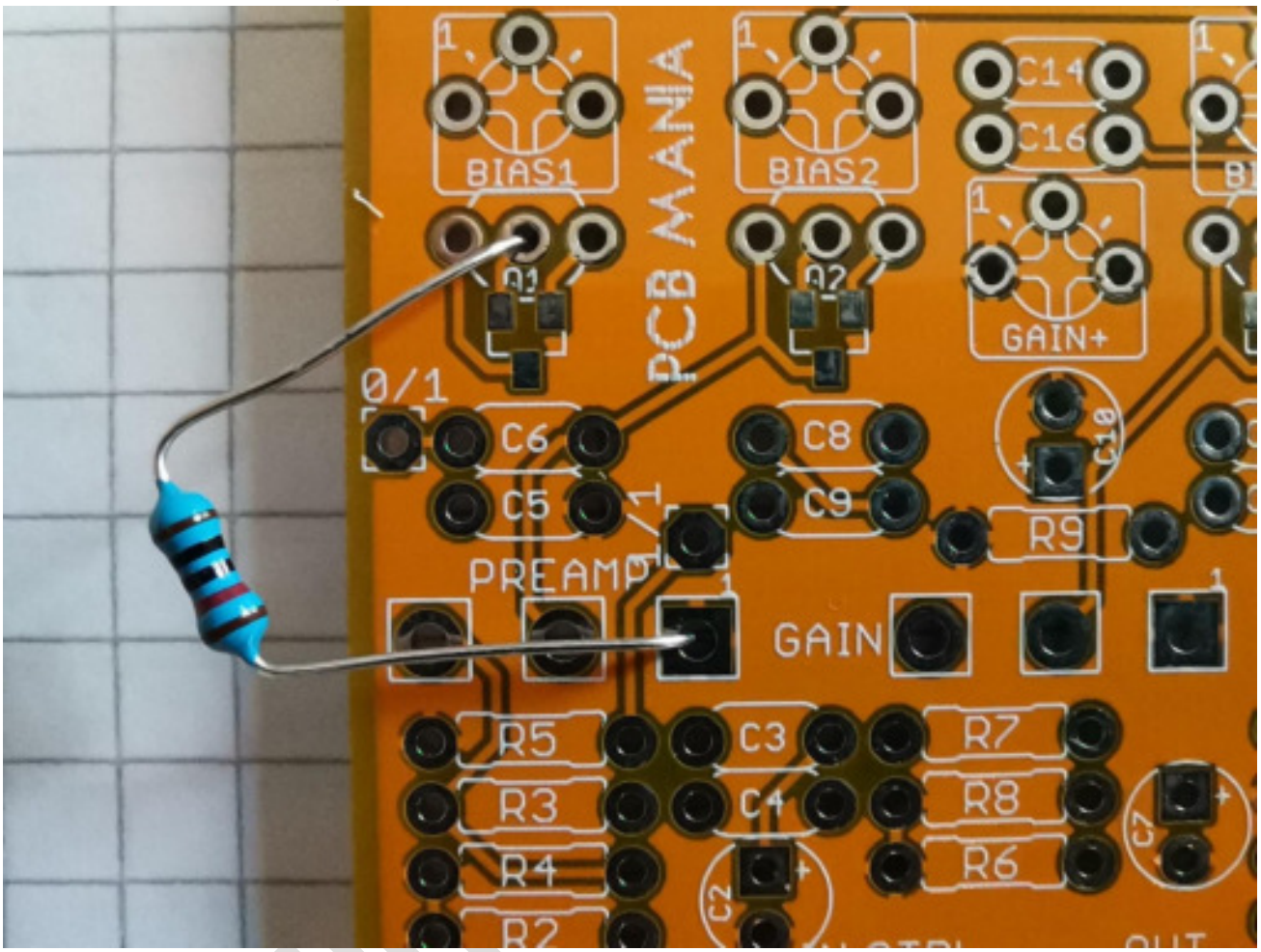
Build Notes

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

R15*

The oldest version of the board lacks the R15 1m resistor. Place it between the pin Gate (middle one) of Q1 and GND as in the example below:



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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