Vandal from Hell

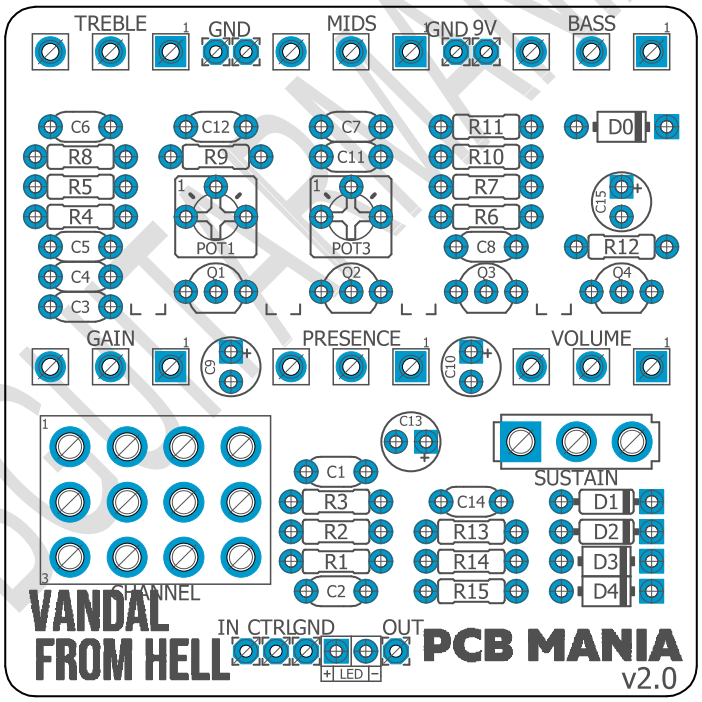
Based on:
Randal RG100ES Pre amp
Effect type:
Metal Pre-amp, overdrive
Build difficult:
Intermediate

Amount of parts:
Average, total 50 components
Technology:
JFet Transistors
Power consumption:
24V or 18v

Enclosure type:
125b
Get your board at:
Vandal from Hell
Get your kit at:
Das Musikding (Europe)

Project overview:

PCB Guitar Mania inspired by the Preamp From Hell (Randall RG100ES Emulator). I really recommend this build to anyone who is looking for an excellent Metal pre-amp; this brutal high-gain pre-amp/distortion is a must!



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Introduction

This is the preamp of the brutal Randall RG100 solid-state amplifier made famous by Dimebag Darrell of Pantera. The best high-gain preamp/distortion you will ever have.

Vandal from Hell is NOT versatile…for METAL players ONLY!

Controls

Potentiometers

- Bass
- Gain
- Mids
- Presence
- Treble
- Volume

Bill of materials

Resistors	
Part	**Value**
R1	68k
R2	1m
R3	2k2
R4	20k
R5	1k
R6	2k2
R7	4k7
R8	10k
R9	4k7
R10	1m
R11	1m
R12	10K
R13	1k
R14	2k2
R15	4k7

Capacitors	
Part	**Value**
C1	220p
C2	10n
C3	470N
C4	22n
C5	4n7
C6	2n2
C7	220n
C8	22p
C11	220n
C12	4n7
C14	100n

Electrolytic Capacitors	
Part	**Value**
C9	10u
C10	1u
C13	10u
C15	220u

Potentiometers	
Part	**Value**
BASS	50k B
GAIN	50k A
MIDS	2k B
PRESENCE	2k B
TREBLE	50k B
VOLUME	10k A

Trimpots	
Part	**Value**
POT1	100k
POT3	100k

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

Switches	
Part	**Value**
Channel	4PDT ON-ON
Sustain	SPDT ON-ON

Diodes	
Part	**Value**
D0	1N5817
D1	1N914
D2	1N914
D3	4v zener
D4	4v zener
LED	3mm red LED
LED	3mm red LED

Shopping list

Resistors		
Qty	**Value**	**Parts**
2	10K	R12, R8
2	1k	R5, R13
3	1m	R2, R10, R11
1	20k	R4
3	2k2	R3, R6, R14
3	4k7	R7, R9, R15
1	68k	R1

Capacitors		
Qty	**Value**	**Parts**
1	100n	C14
1	10n	C2
2	220n	C7, C11
1	220p	C1
1	22n	C4
1	22p	C8
1	2n2	C6
1	470N	C3
2	4n7	C5, C12

Electrolytic Capacitors		
Qty	**Value**	**Parts**
2	10u	C9, C13
1	1u	C10
1	220u	C15

Potentiometers		
Qty	**Value**	**Parts**
1	50k B	TREBLE
1	10k A	VOLUME
2	2k B	MIDS, PRESENCE
1	50k A	GAIN
1	50k B	BASS

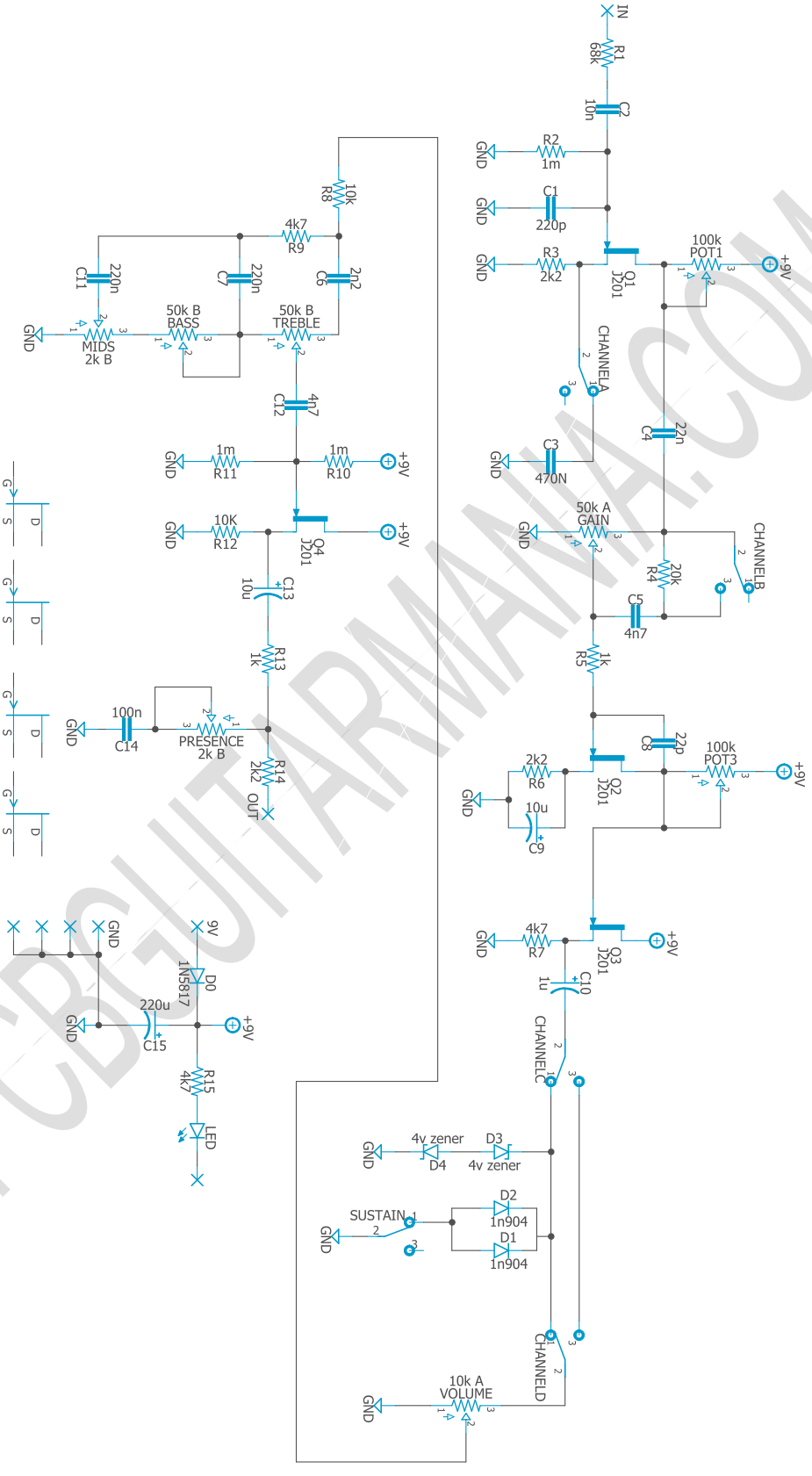
Trimpots		
Qty	**Value**	**Parts**
2	100k	POT1, POT3

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

Switches		
Qty	**Value**	**Parts**
1	4PDT ON-ON	Channel
1	SPDT ON-ON	Sustain

Diodes		
Qty	**Value**	**Parts**
1	1N5817	D0
2	1N914	D1, D2
2	4v zener	D3, D4
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.

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

This device requires a power input of 24 volts, but if necessary, it can also operate with an 18-volt power supply.

J201*

The True Hole transistors can be difficult to find; you can set the SMD SST201 versions instead.

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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