

Frogpedals BluesMaster Guitar Pedal PCB build document ver. 1

Suggested Experience Level Required to build: **Green: Beginner Friendly**

Background: The BluesMaster PCB is based on the Marshall BluesBreaker guitar pedal circuit. One of the most popular guitar pedal DIY circuits. It was one of three Marshall guitar pedals introduced in 1991. The purpose of the BluesBreaker guitar pedal was to simulate the vacuum tube sound of the vintage 2x12 Marshall combo amp used by Eric Clapton in John Mayall's Bluesbreakers band. The BluesBreaker was intended to add a nice breakup and a touch sensitive overdrive to a clean amplifier at lower volumes giving an illusion of a Marshall amp at high output levels. Despite all the good things, some people feel the output is a bit low. Another big downside is that to buy a used original pedal now, on the market will cost you about \$350-\$500 dollars.



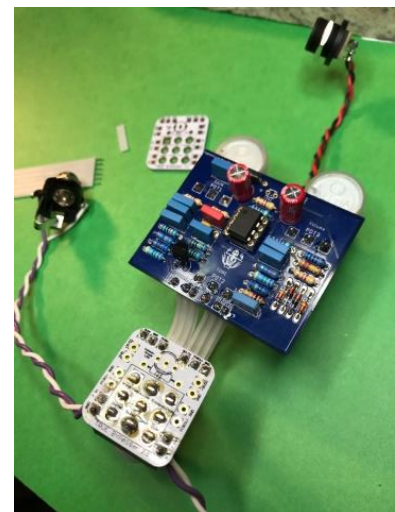
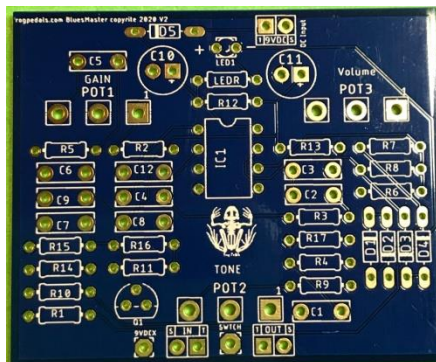
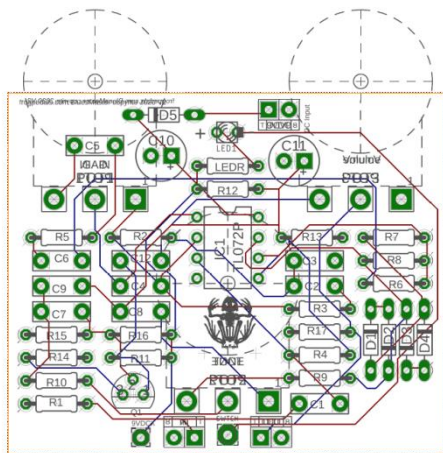
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Frog's BluesMaster PCB uses the same circuit, but with a twist suggested to me by a certain Kansas City guitar pedal Guru. The twist is, that the original BluesBreaker effect circuit is paired up with an Electro Harmonix (EHX) LPB-1 clean boost circuit from 1969 on the output side. This makes the circuit you will build one of the most unique, and great sounding overdrives you can make and at a fraction of the cost of an original. It pairs up well with a single coil or humbucker. With the gain turned down, it makes a nice clean boost, but you can set it on the edge of breakup and when you dig into the strings, it starts into a nice creamy breakup. Turn the gain up further and it breaks up earlier and can begin to provide distortion sounds. Here is another secret. Build two and run one BluesMaster into a second BluesMaster and you have the basic makings of the popular King of Tone guitar effect pedal made famous by the Analogman guitar effect company. You can have one set for more gain and one lower/touch sensitive breakup and then run the higher gain into the lower gain setting and really get some great overdrive/distortion.

Building the BluesMaster PCB

First, I hope you have already read the **"BUILDING YOUR FROG GUITAR EFFECT PEDAL PCB – A General Guide"**. If not, stop right now and PLEASE read that guide and then come back here. I'll wait.

Board pictures and diagrams



Bill Of Materials

Part Description	Value	Size	Quantity
Resistor	1M5 (1.5 meg ohms)	¼ watt	2
Resistor	1M (1 meg ohms)	¼ watt	2
Resistor	4k7 (4.7 kilo ohms)	¼ watt	4
Resistor	3k3 (3.3 kilo ohms)	¼ watt	1
Resistor	6k8 (6.8 kilo ohms)	¼ watt	2
Resistor	220k	¼ watt	1
Resistor	1k	¼ watt	1
Resistor	10k	¼ watt	1
Resistor	47k	¼ watt	2
Resistor	390R (390 ohms)	¼ watt	1
Resistor	100k	¼ watt	1
Capacitor	.01uf (10 nanofarad)	25 vdc or higher	5
Capacitor	47pf (47 picofarad)	25 vdc or higher	1
Capacitor	.22uf (220 nanofarad)	25 vdc or higher	3
Capacitor	100uf polarized electrolytic	25 vdc or higher	2
Capacitor	.1uf (100 nanofarad)	25 vdc or higher	1
DIP socket	8 pin	For IC1	1
IC1	TL072 op amp		1
Transistor	2n5088		1
Diodes 1-4	1n914	Clipping diodes for overdrive	4
Diode 5	1n5817	Reverse polarity protection	1
LED –choose color	3 or 5 mm		1
25k Linear potentiometer	B25k	16mm Alpha right angle	1
100k Linear potentiometer	B100K	16mm Alpha right angle	1
100k Audio potentiometer	A100K	16mm Alpha right angle	1
DC power jack		Lovemyswitches.com	1
¼ inch audio jack	¼ inch	Open or closed frame	2
Enclosure of choice		Lovemyswitches.com	1
Stompswitch for true bypass		Lovemyswitches.com	1
Stompswitch PCB	Ver 2.1	Frogpedals.com	1
Flat wire for stompswitch “suggested”	6 wires – regular hookup wire can be used	Frogpedals.com	1

Enclosure Layout

Refer to the: ***“BUILDING YOUR FROG GUITAR EFFECT PEDAL PCB – A General Guide”*** on the <https://frogpedals.com/index.php/product-documentation/> page for a sample drilling template.

Stomp switch PCB Installation

Refer to the: Frog Stomp Switch PCB documentation on [“https://frogpedals.com/index.php/product-documentation/”](https://frogpedals.com/index.php/product-documentation/) page.

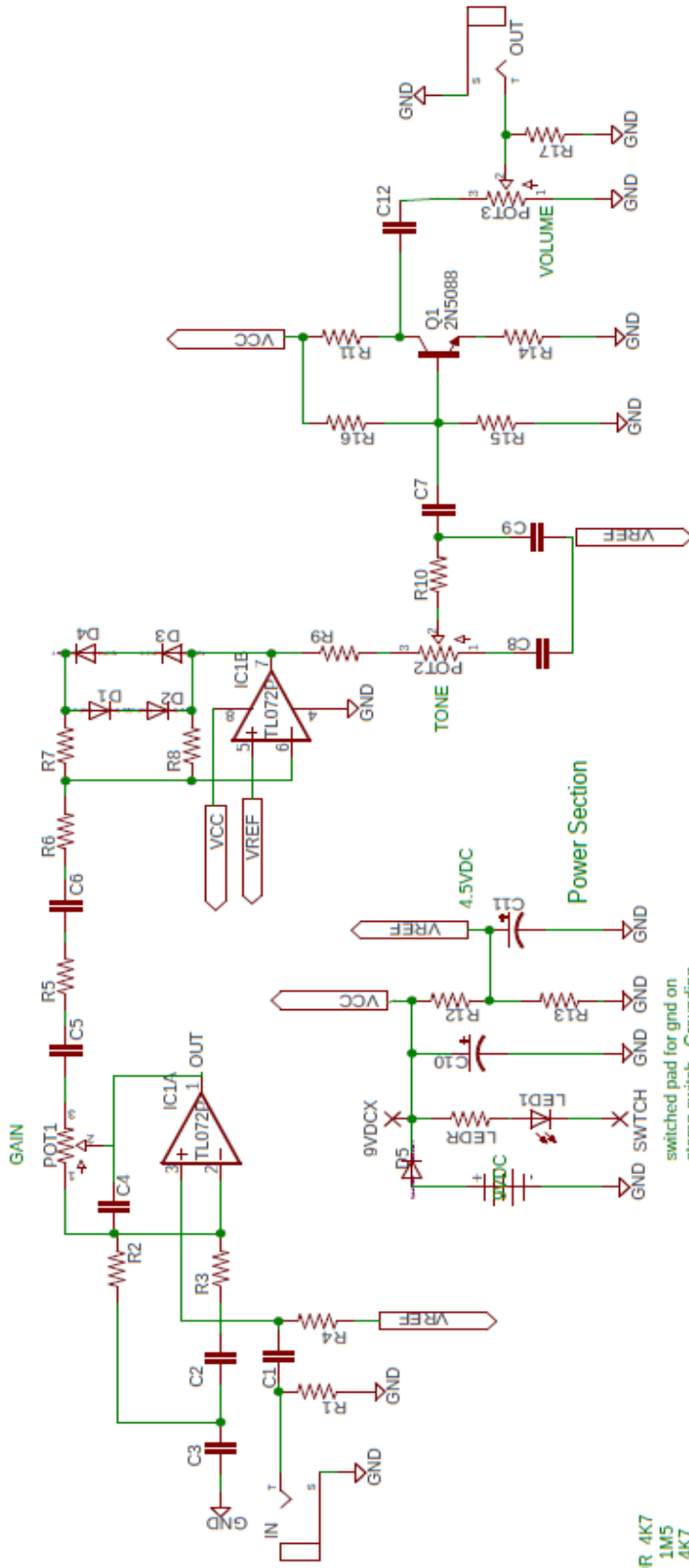
Note: there is a “swtch” solder pad on the bottom of the PCB. This pad should be hooked to the stompswitch PCB “swled” pad on the stompswitch PCB on the top/middle of the PCB. When you switch on the effect with the

stompswitch, a ground path is provided to the LED that is installed on the effect PCB and it lights up the onboard LED. When you switch off the effect, the ground goes away and no longer lights up the LED on the effect PCB.

Disclaimer: BluesBreaker, King of Tone, Marshall and Analogman are trademarks of their owners and they in no way are part of, support or endorse Frogpedals.com, nor does Frogpedals.com claim that the circuits we build are a direct clone of the original effects.

Schematic on next page>>>>>

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BLUESMASTER
 (Marshall BluesBreaker with boost 16mm Pots)
 Version 2



- LED1 4K7
- R1 1M5
- R2 4K7
- R3 3K3
- R4 1M
- R5 4K7
- R6 4K7
- R7 6K8
- R8 220K
- R9 1K
- R10 6K8
- R11 10K
- R12 47K
- R13 47K
- R14 390R
- R15 100K
- R16 1M
- R17 1M5

- C1 .01uf 10nf
- C2 .01uf 10nf
- C3 .01uf 10nf
- C4 47pf
- C5 .22uf 220nf
- C6 .22uf 220nf
- C7 .22uf 220nf - or higher, test
- C8 .01uf 10nf
- C9 .01uf 10nf
- C10 electro 100uf
- C11 electro 100uf
- C12 .1uf 100nf

- IC1 TL072
- Q1 2n5088
- POT1 100K Linear
- POT2 25k Linear
- POT3 100K Audio
- D1-D4 1N914
- D5 1N5817
- LED1 3mm Grn

switched pad for gnd on
 stomp switch. Grounding
 turns LED on.

Power Section

BLUESMASTER frogpedals.com
w/ Boost 8/27/2020
Mark Price
Sheet: 1/1