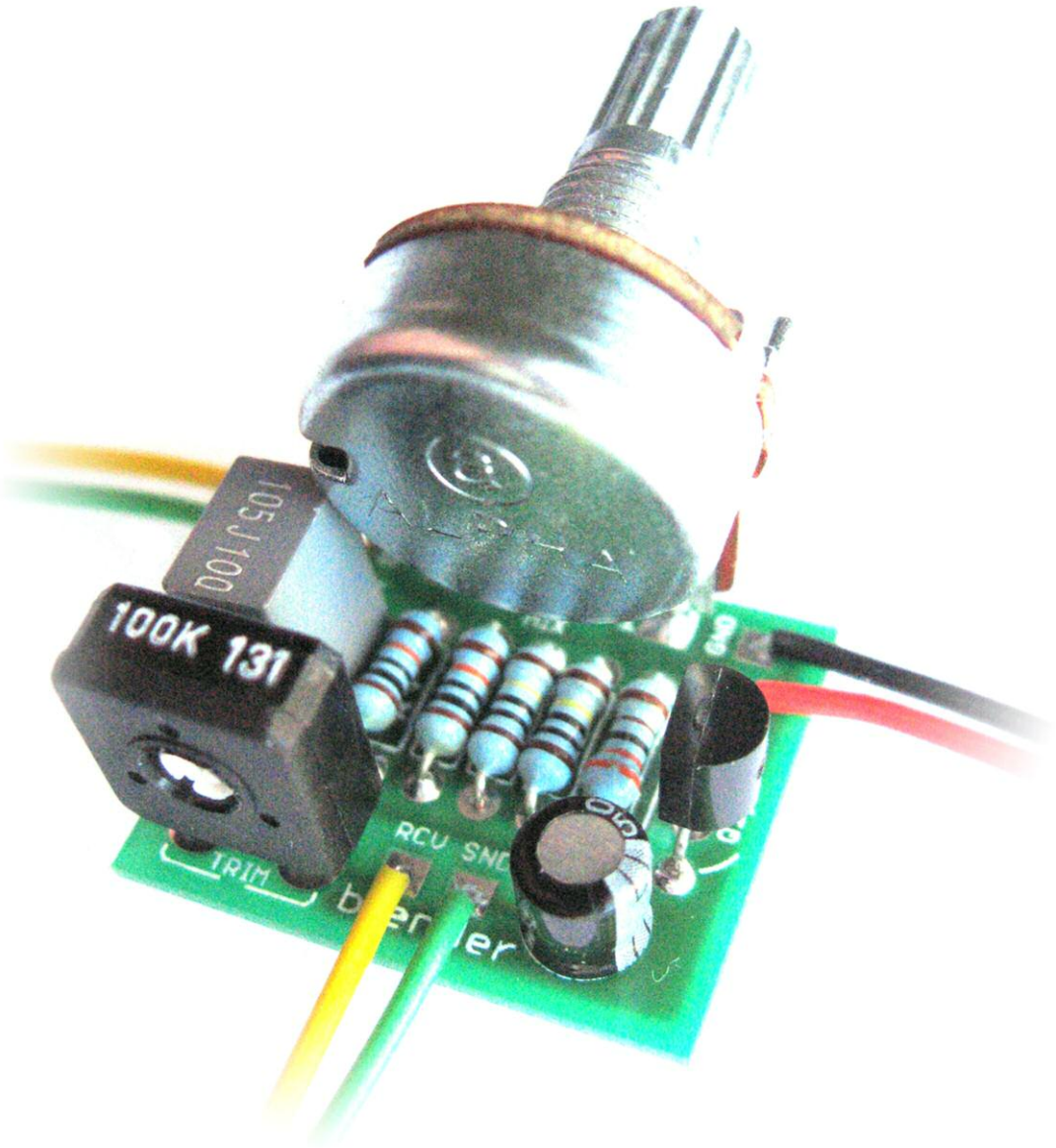
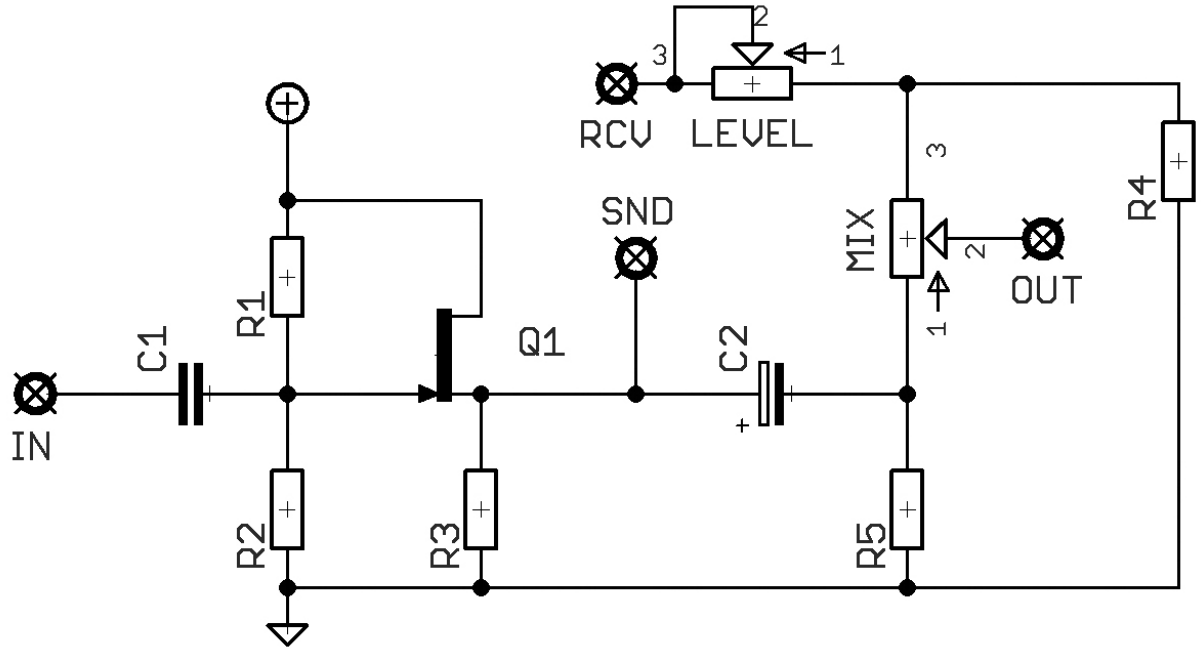


Blender

...because sometimes one signal is just not enough

PedalParts.co.uk

Schematic



BOM

R1	1M
R2	1M
R3	3K3
R4	100K
R5	100K
C1	100n* (1u for bass)
C2	10u
Q1	N-channel FET (J201, 2N5457)
MIX	100KA
LEVEL	100K trim

What does it do?

Takes an input signal and blends it with another signal via a send > receive path. The mixed signal goes to the output.

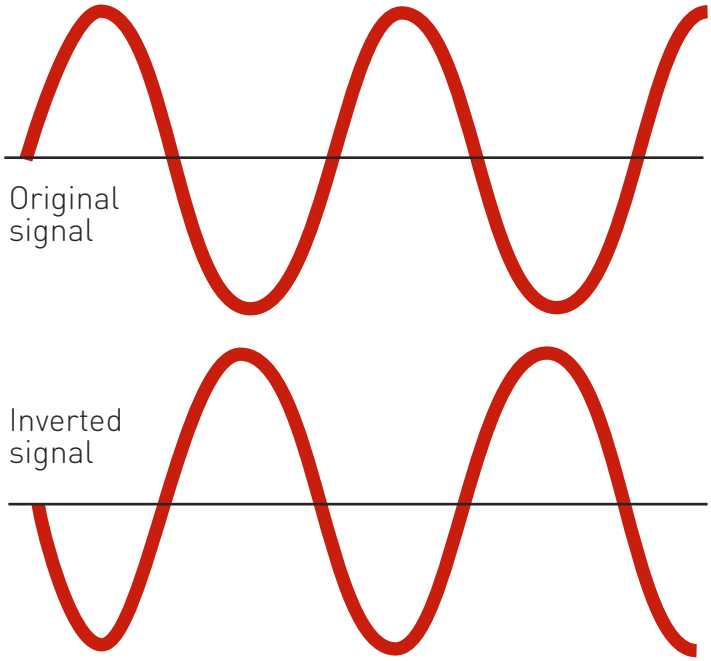
Why would I?

- Add some dry signal to an effect - very useful for bassists.
- Make an effects loop with a mix control.
- Use your imagination.

A brief note about phase...

...in basic terms.

Your guitar signal is a waveform. It has peaks (high points) and troughs (low points) that all cross a zero-point in the middle.



When your signal passes through various stages of an effect this wave may be inverted due to the way components amplify that signal (summing it with a voltage).

The signals to the right are now 'out of phase'. If we combine these signals to any degree they will begin to cancel each other out. (+2 summed with -2 is zero, yes?)

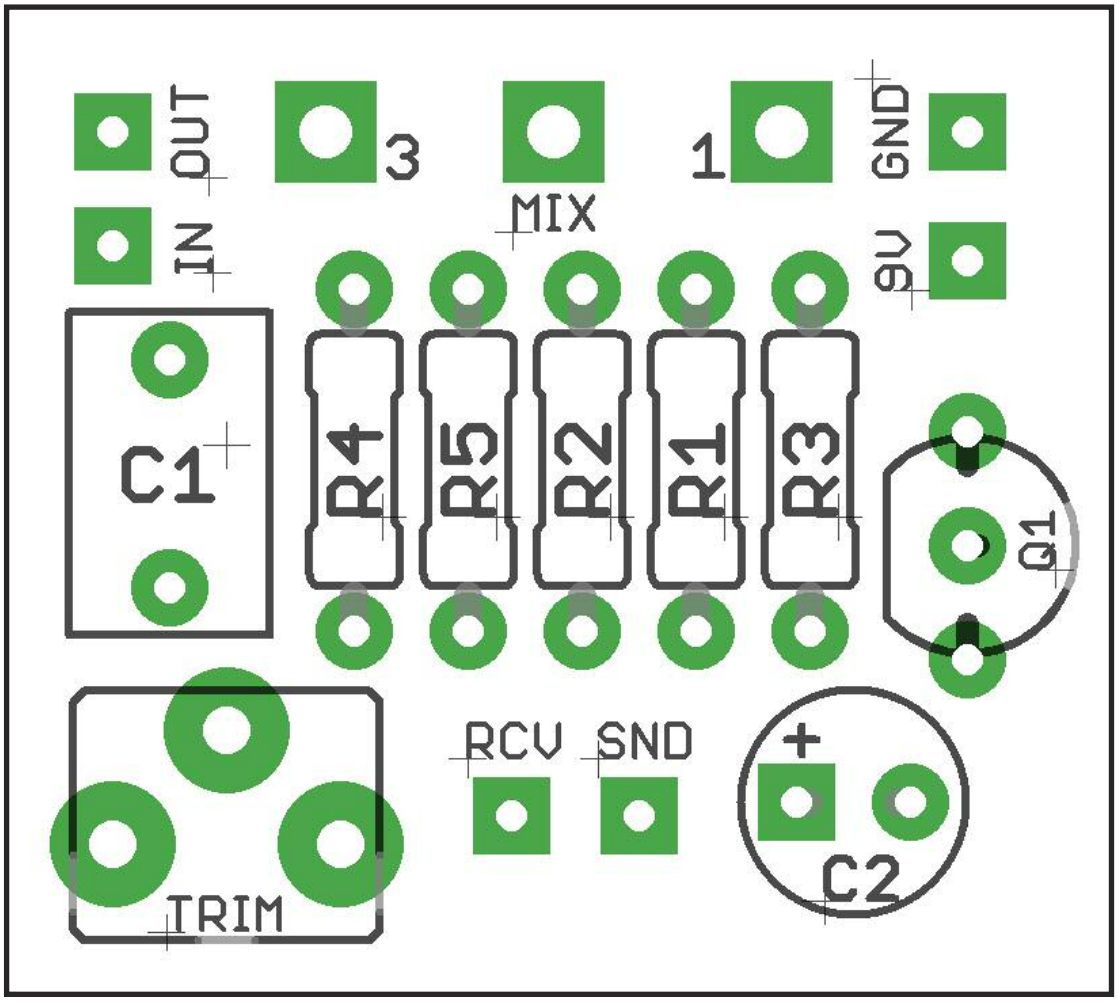
This is a consideration when adding a blender to a circuit. If the end result signal of that circuit is inverted, then blending it with your original signal will result in cancellation, which means volume drop.

So how do you know whether your circuit produces an inverted phase? Unfortunately there's no easy way. You can check it with an oscilloscope or try to work it out using the schematic, which requires some electronic knowledge.

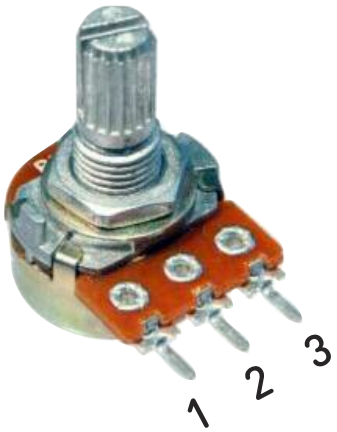
Another way is to try it! If you get volume drop when you blend the circuits, you're probably out of phase.

I'm out of phase - how do I fix it?

The only way to do it is to run the signal through another inverting stage, which means more circuitry. Sorry. If you're using the Blender as a looper (i.e. attaching external pedals to the blended chain) you could try adding different pedals which may give an inverted signal.



The PCB is designed to have the mix pot mounted directly. You can use wire if you like - simply connect the board pads to the corresponding pins on the pot.



Snap the little metal tag off the pot to mount it flush in the box.

Use some kind of heat sink on the legs the transistor when soldering. They aren't keen on heat. Any more than 3-4 seconds of iron and its toast.

Recommended assembly order:
Resistors, Caps, Transistors, Wires, pot

Wiring it up

...well, it depends what you're doing with it.

Let's say, for instance, you're building a Big Muff, and you want to add the blend circuit to mix some dry signal with the Muff signal, all inside one pedal.

For your switch wiring, just replace the Muff IN and OUT wires with the Blender IN and OUT wires. Then connect Blender SND to Muff IN, and Blender RCV to Muff OUT.

Blender 9v and GND just connect to the same as the Muff.

To wire it as an effects loop pedal with a blend control, follow this: