

## 4. M1-PCB CONFIGURATION AND USE INSTRUCTIONS

Updated: November 8, 2022

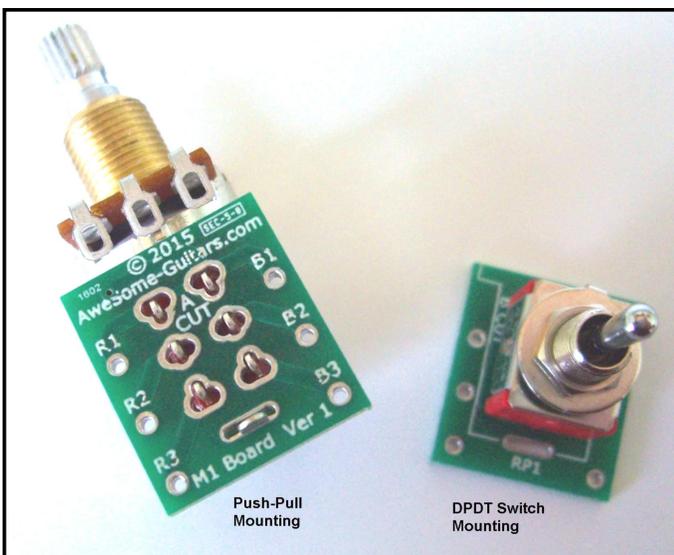
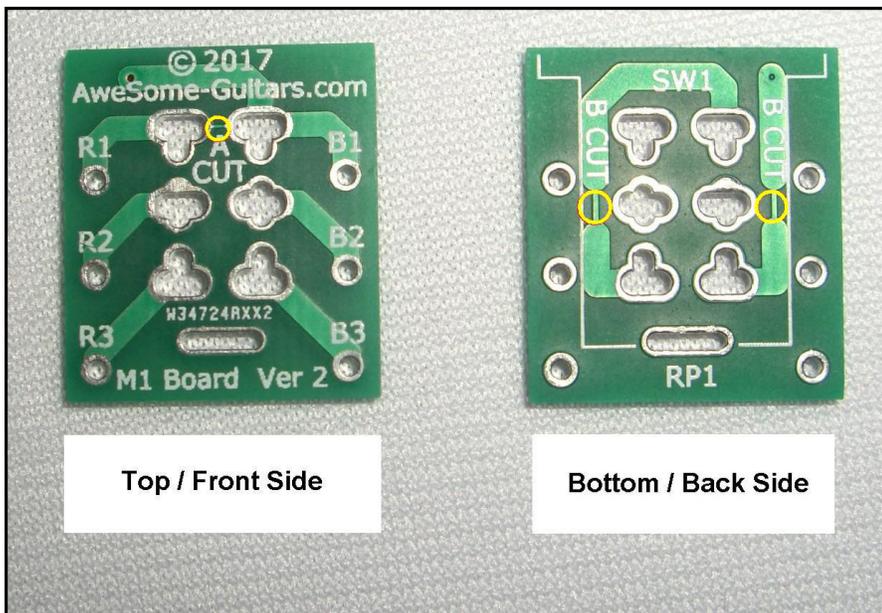
This document shows you how to configure our M1-PCB product (ver 2) for different needs. It contains examples of how you can use this product for different wiring applications.

### The M1-PCB Description

Our **M1 Printed Circuit Board (M1-PCB)** is a multi-purpose product that is ideal for all your electric guitar or bass switching projects where a **DPDT mini toggle switch -or- push-pull potentiometer** components are used. It simplifies wiring projects and reduces wiring mistakes. It's one of those "Why didn't I think of that?" items.

It eliminates the frustrating problem of connecting and soldering wires to six very tiny switch pins. You just solder the component to the M1-PCB. Next, you solder wires to the applicable circuit board pads (R1, R2, R3 and B1, B2 B3) and they are electrically connected to one of the six tiny pins of the component.

Here is both a **front view** and **rear view** of the M1-PCB. Notice the yellow circles identify where the single "A" cut location and the two "B" cut locations are made. The traces are narrower in these areas for easy cutting.



Examples of mounting a push-pull potentiometer and DPDT mini toggle switch to the M1-PCB.

Because the M1-PCB is a multi-purpose product, you can select which of three "personalities" it takes on by cutting clearly marked traces on the M1 circuit board. Although a Dremel tool with a diamond bit is ideal to cut circuit board traces, they can also be cut using an Exacto blade.

**Personality #1: Pickup coil phase reversal.** Solder a standard DPDT mini-toggle switch or push-pull pot component onto the M1-PCB and **cut a single "A" trace** on the circuit board. Now you can solder black and red wire pairs directly to the M1-PCB. These wires can be directly connected to both the pickup coil and the input circuit so you can turn the pickup coil Off or On; in either normal-phase or reverse phase. The M1-PCB has an on-board "crossover" circuit so you don't need to hand wire it. You can also use this personality with either of the following components. Use an ohmmeter between R1 and B1 to confirm no continuity.

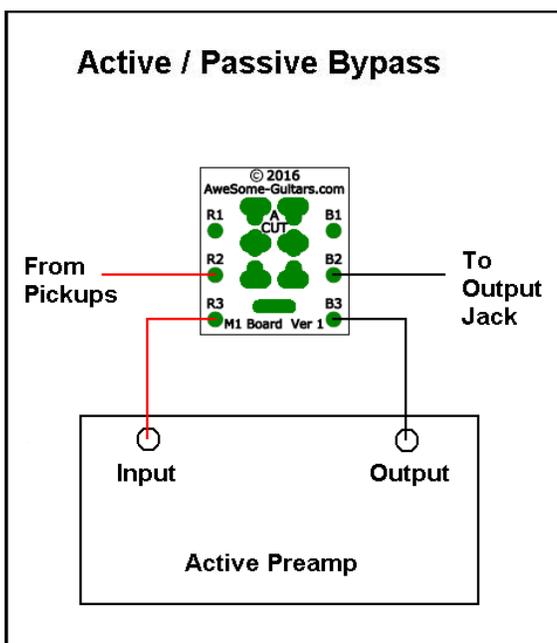
- DPDT (On-Off-On) mini toggle switch for both On-Off and phase switching control.
- DPDT (On-None-On) mini toggle switch *-or-* a push-pull pot for just phase switching control.

**Personality #2: Put two pickup coils in series.** Solder a standard DPDT push-pull pot or DPDT (On-None-On) mini toggle switch component onto the M1-PCB and **cut two "B" board traces**. Now you can solder black and red wire pairs directly to the board. This configuration lets you "span" two pickup coils to put them into a *series* circuit. Use an ohmmeter between R1/B3 and R3/B1 to confirm no continuity.

**Personality #3: Universal connections.** When you cut all three traces (one "A" trace and two "B" traces), you electrically isolate each of the six switch terminals of either the DPDT mini toggle switch or push-pull pot component so they can be used for any wiring application. This lets you quickly connect or jumper any of the switch terminals. The point-to-point hand wiring is simplified because the wires are attached to the circuit board and electrically connected to the switch component terminals. Use an ohmmeter between R1 and B1, as well as R1/B3 and R3/B1 to confirm no continuity.

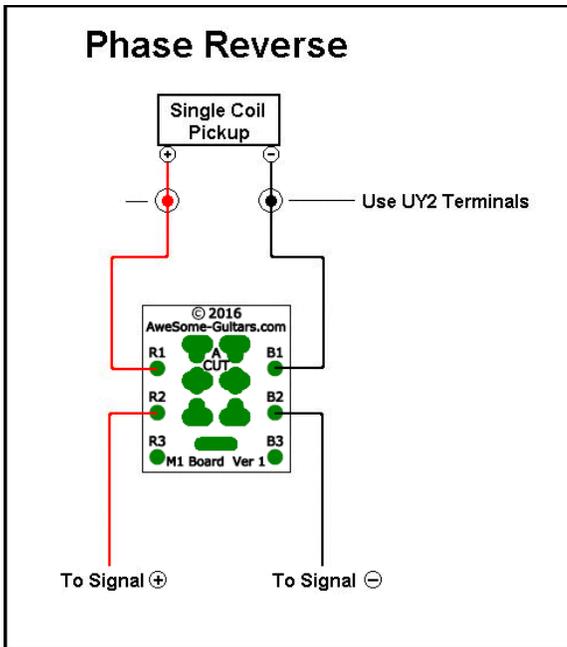
Because the M1-PCB has six separate wire solder connections (R1, R2, R3 and B1, B2, B3) that electrically connect to each terminal, you can use **Red** and **Black** wiring to get any needed pickup coil polarity requirements.

### Some Common Wiring Control Examples.



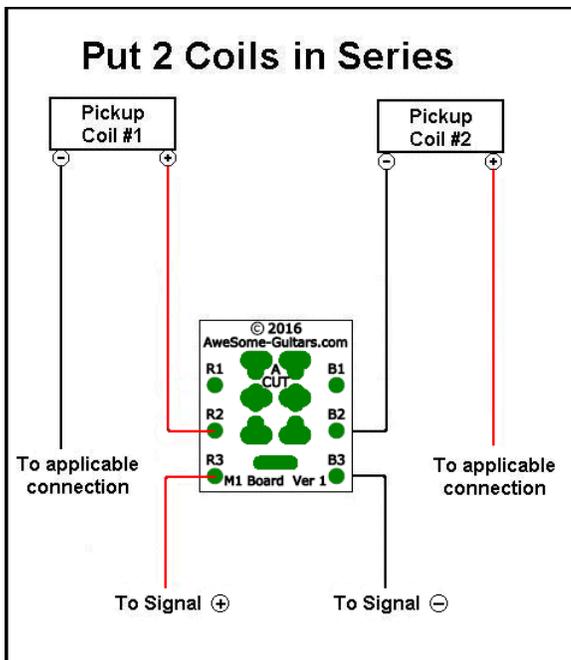
This example uses either a push-pull pot or a DPDT (On-none-On) mini toggle switch component to switch on or bypass an Active Preamp.

Before attaching the M1-PCB to the component, you need to cut both "B" circuit traces.



This example uses either a push-pull pot or a DPDT (On-none-On) mini toggle switch component to reverse the phase of a pickup coil. If a DPDT (On-Off-On) mini toggle switch is used, this lets you get both On-Off and phase switching control

Before attaching the M1-PCB to the component, you need to **cut the "A" circuit trace**. Use an ohmmeter between R1 and B1 to confirm no continuity.



This example uses either a push-pull pot or a DPDT (On-none-On) mini toggle switch component to put two pickup coils into correct phase series.

Before attaching the M1-PCB to the component, you need to **cut both "B" circuit traces**. Use an ohmmeter between R1/B3 and R3/B1 to confirm no continuity.

*(more examples will be provided soon)*