Share-A-Loop Stompbox

Problem

Given you are to play 2 different instruments using 2 different amplifiers or 2 different mixer channels and you want to use the same effect unit with both of them, you can:

- Unplug the unit each time you switch instruments (unpractical and not reliable)
- Buy a second unit for every unit you want to share (could be expensive)
- Use 2 A/B boxes: one to select the instrument before the unit, one to select the amplifier or channel after the unit (not really practical, somewhat expensive and not really reliable)
- Build the device presented here!

Requirements

- We need a switch that sends the signal of the selected instrument through the loop to its associated output (input A through the loop to output A or input B though the loop to output B).
- We want separate grounds for the 2 channels because we might be using 2 different amplifiers and want to prevent ground loops.
- We want to switch both the ground and the signal of the input of the selected channel to the input of the loop, and both the ground and the signal of the output of the loop to the output of the selected channel.
- We want to ground all signals when switching instruments to prevent pops.
- We want to switch the signal of both the input and the output of the inactive channel to the corresponding ground to prevent any noise.
- We want our unit to be totally passive and inexpensive!

Solution

The grounds of the input and output of the channels and of the loop can always stay connected. We need to select the output signals for the channels and both the ground and the signal for the input of the. So we need at least a 2-way switch with 4 poles. It is called a "4 pole double throw" switch (short: 4PDT).

To ensure the grounding of all channels while switching, we have to use a switch with 3 positions (4P3T) with the grounds in the middle position (so we need a 16 terminals switch, not the 12 terminals kind). We even get an extra "mute both channels" position, useful while switching instruments on stage.

If we used a footswitch, we would have to give up the grounding while switching and would moreover need a LED to indicate the active channel. We could choose to live without the grounding at the risk of a "pop" every now and then and without the LED at the risk of not knowing which channel is active, but the 4PDT footswitches are very hard to find anyway (and expensive!).
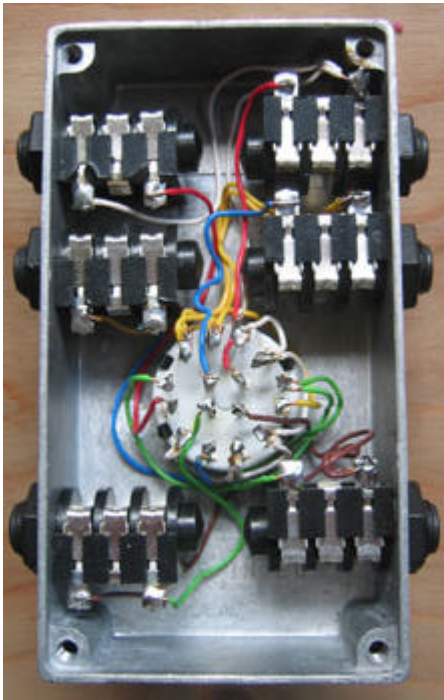
I found easily a 16 terminals 4P3T rotary switch, but was not able to find a toogle, rocker, or slide switch. Rocker and slide are not that easy to mount anyway.

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vincent@bluesmothers.de

Wiring diagram
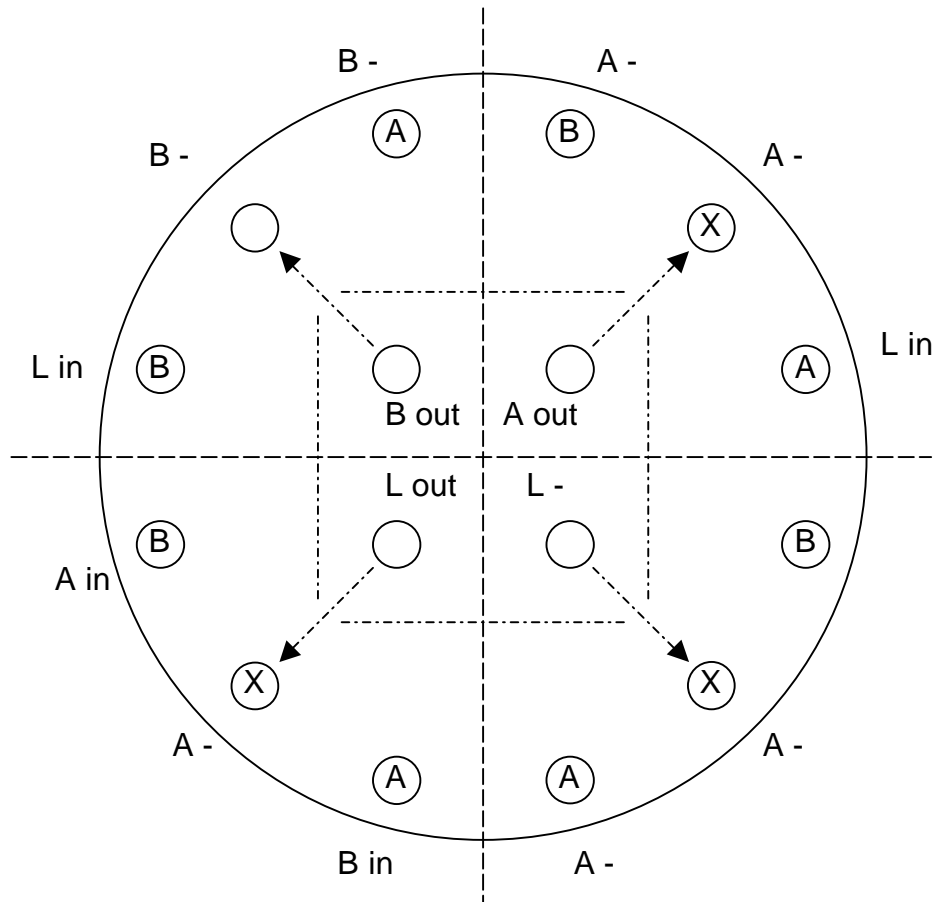
(Terminals pointing towards you, as in the photo)

The ground of channel A (A -) is also the ground of the unit and is white. The signals of the channel A input (A in) and output (A out) are red. The ground of channel B (B -) is yellow. The signals of the channel B input (B in) and output (B out) are blue. The ground of the loop (L -) is brown. The signals of the loop output (L out) and input (L in) are blue.

Take care not to connect the grounds together (I used closed plastic female jacks for this reason) but don't forget to ground the unit using A-.

Parts

I got all my parts from http://www.banzaieffects.com:
1 x SKU17485 à €4.74 + 1 x SKU16261 à €1.90 + 1 x SKU17435 à €0.95 + 6 x SKU17603 à €0.65 = €11.49 (+ taxes and shipping).

If you really want a footswitch, and can bear with the side effects, you can get a 4PDT for €16.54 from Banzai Effects (SKU16235).

That's it! You should be able to build this useful and inexpensive device in a couple of hours…

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