

Installing the Bourns PTL Adapters into vintage ARP synthesizers involves removing the old CTS pots, installing the new PTL pots, then wiring up the LEDs contained on the PTLs.

The LEDs are powered by a separate driver board, which utilizes power from the existing ARP power supply. The LED's are typically daisy chained together using as many driver boards as deemed necessary.

REMOVING CTS POTS:

Removal of the original CTS pots is mostly just a typical component de-soldering process. Care should be taken to avoid damaging the pots, as they can be cleaned and re-used in other synthesizers. (And often can be sold...even without cleaning...for more than the cost of a GMUSynth adapter kit!)

The retainer clips used to provide mechanical security for the pots can be troublesome. Avoid the temptation to cut these clips as they compromise any future installation of the pot.

Instead the clips can typically be removed easily if proper untwisting is performed. Using needle-nose pliers attempt to grasp the clip as close to the PCB as possible. Then, instead of twisting, just squeeze to slightly flatten the clip. Re-grip and repeat. After a dozen or so squeezes the clip will be perfectly flat and can slide out of the PCB slot.

If you still have trouble with this, one can carefully clip away just the portion of the clip that is still bent. This small portion of the clip that is removed won't substantially affect its performance on the next installation.

LED DRIVER BOARDS:

The LED driver boards use an LM317 regulator to power the LEDs. The two resistor values specified (R1,R2) well suited for most common LED's, but may need adjustment if super bright LED colors (such as blue) are used. A trimming resistor is included for quick adjustment of the brightness.

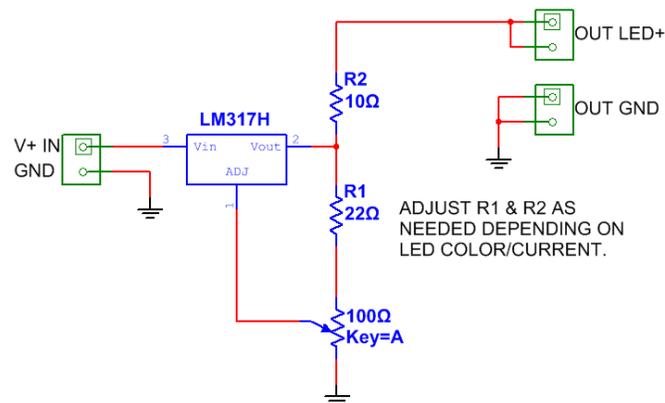
The LM317 is capable of delivering 1.5 amps, although it will get hot at this current. The regulator is more than sufficient to power an entire synth worth of PTL's at a comfortable brightness. Multiple boards are provided with the larger kits as a matter of convenience in wiring.

If one wishes to use different colored LED's, it may be beneficial to use a separate driver board for each color as this allows normalizing the brightness amongst the various LEDs.

The driver boards connection pads are spaced at a standard .100 pitch and will accommodate SIL pin headers and connectors if desired.

The driver board can be mounted in any location. Often, it is most convenient to attach it directly to the ARP PCB using one of the provided #6-32 threaded standoffs. These will thread to the existing mounting screws used the in the synth.

The simple schematic is provided below:



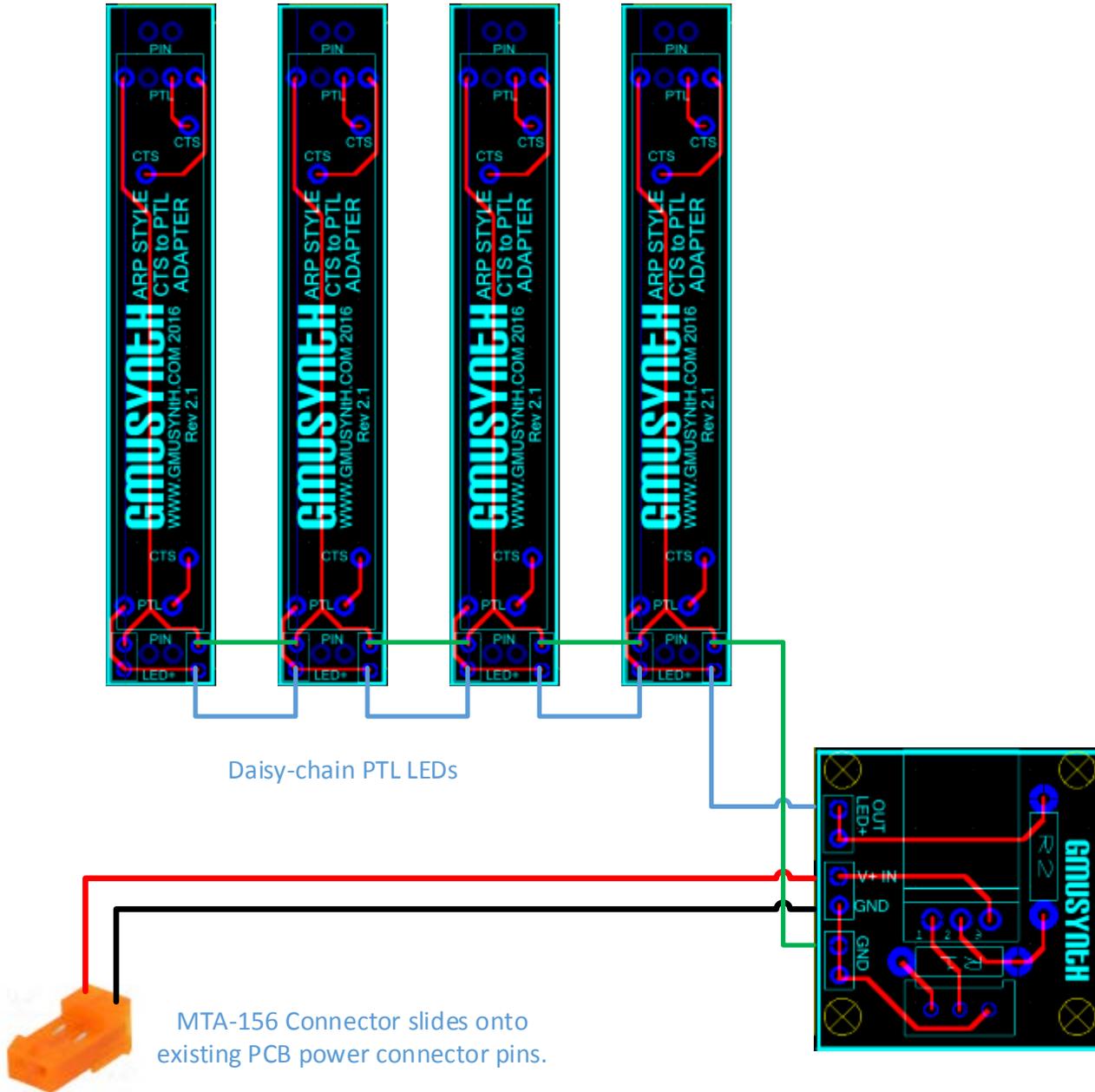
PTL LED WIRING:

Typically, the PTL LEDs will have power provided via 'daisy-chaining': wiring power from one slider to the next. Each adapter includes two pairs of terminals for power / ground.

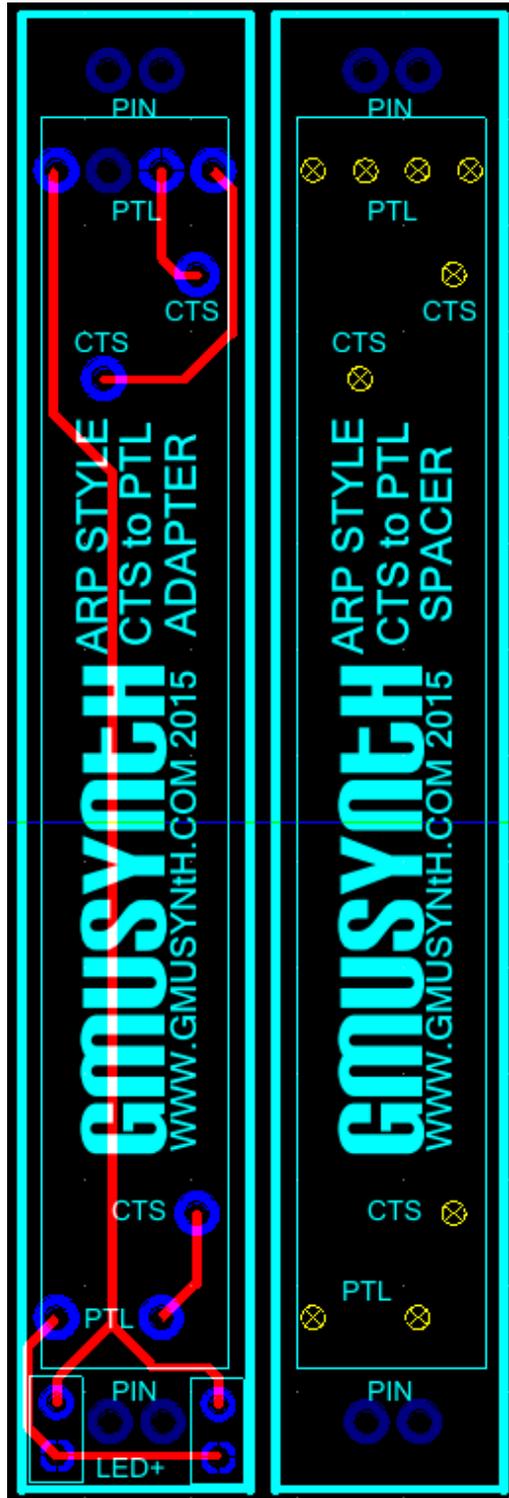
The box LEDs in the PTL pots are standard 2x3x4 rectangular LEDs. As they are diodes, correct polarity must of course be maintained. If an LED does light, try simply pulling it from the slider, reversing it, and re-inserting. I've noticed the pots arrive from the factory with a seemingly random polarity standard. So, double check this if a few aren't lighting.

The diagrams below show a typical wiring diagram:

TYPICAL PTL LED DAISY CHAIN WIRING:



PTL ADAPTER AND SPACER:



LED DRIVER BOARD:

