

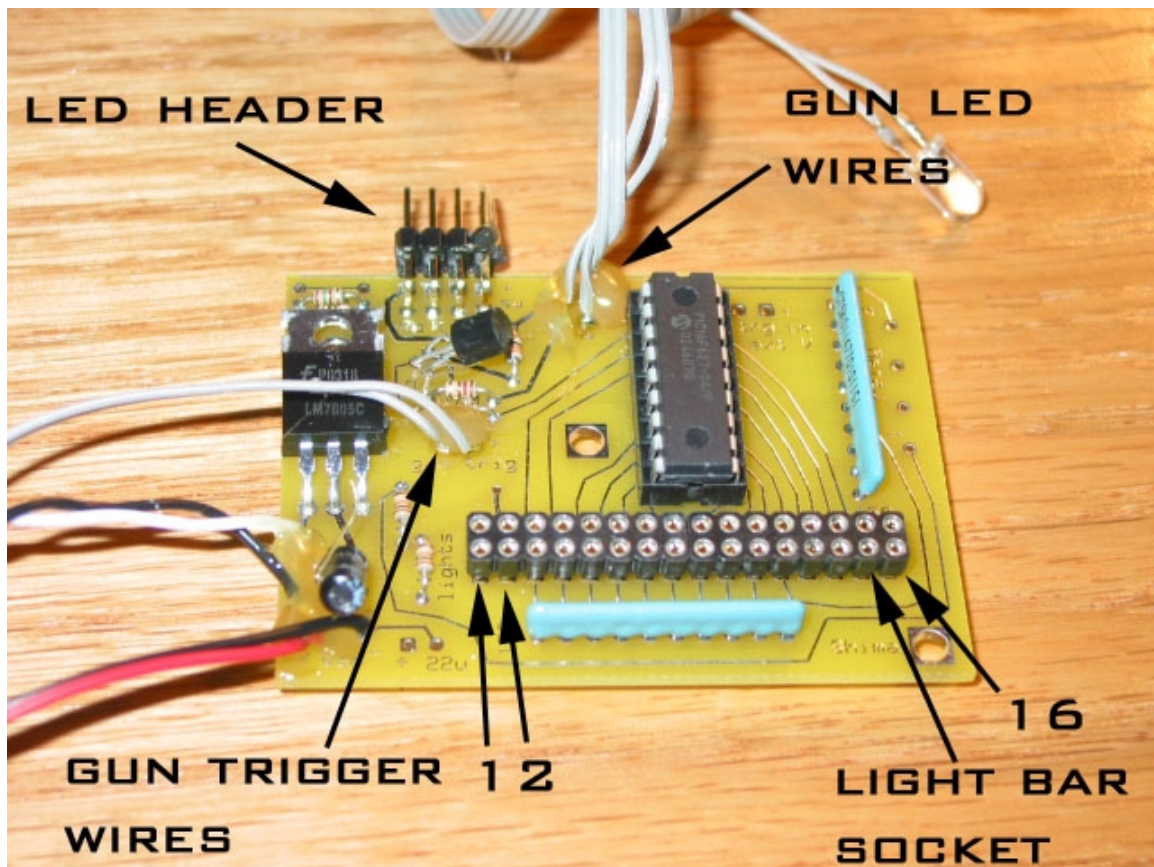
Ghostbusters Proton Pack: Gun and Wand Light Board

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WAND LIGHT BOARD KIT

This board controls both the gun bar graph (consisting of 16 red rectangular LEDs), as well as the flickering barrel gun LEDs and the static backlighting LEDs as seen in the gun body.

Here is a picture of the assembled proton pack gun and wand light board kit:



The 2 switch wires next to the 9V battery snap coming off the board are connected up to the master on/off power switch. This allows you to keep the batteries connected, but you can turn the unit on and off by just using the switch. If you have a master power switch already installed in your pack, you can also remove this switch and connect the board up to the common power switch, **if all the electronics are running off the same battery**. If you are using different battery sources for different boards, you can still use a master power switch if it is DPDT (double pole double throw).

The gold header on the board is for connecting the backlighting LEDs for the gun main body. These lights are optional. The LEDs include the white vent light

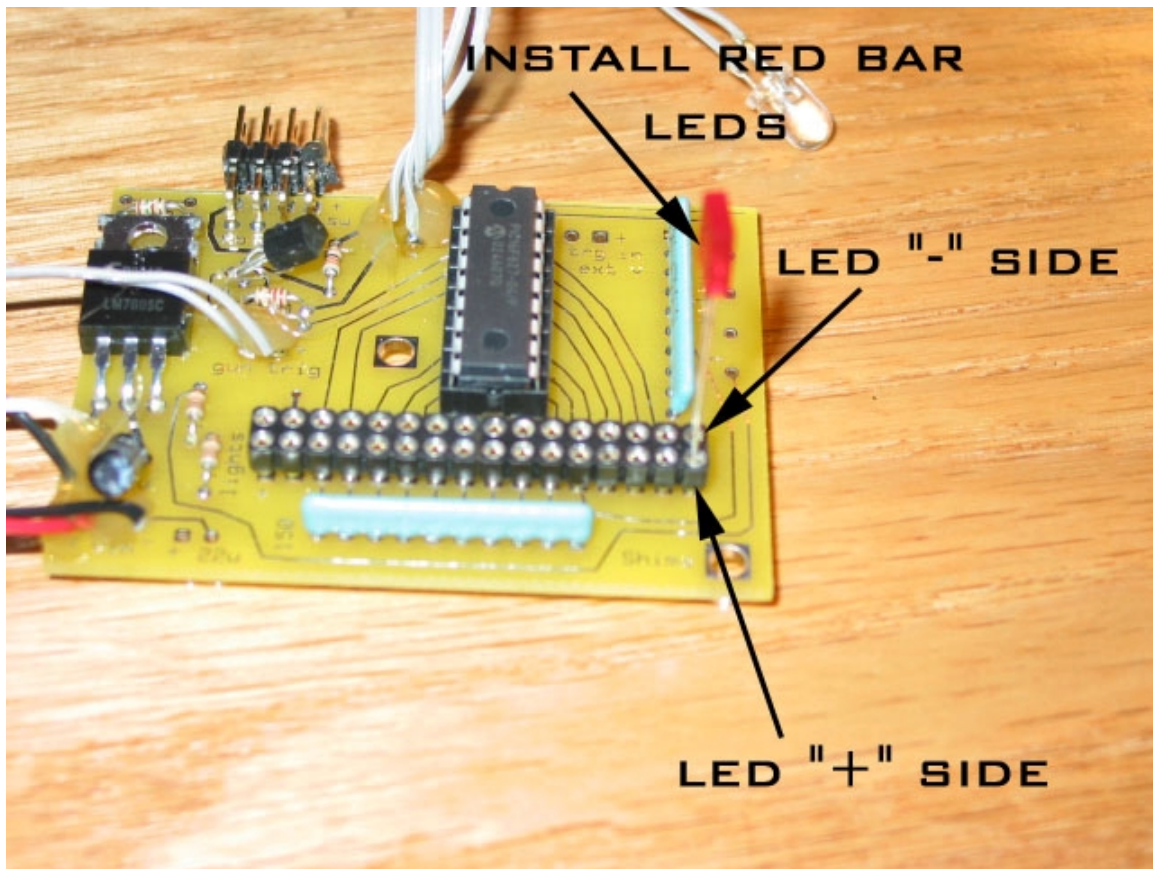
(which can be switched on and off using a separate switch), the yellow (or red) blinking LED, the slo-blo red static LED, and the orange static LED.

FINISHING THE KIT

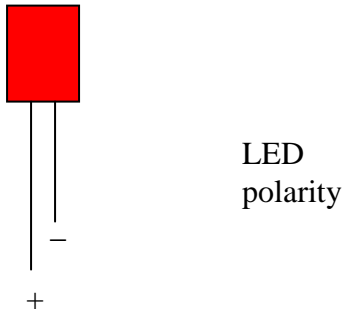
Installing bargraph LEDs:

In order to finish the kit, you need to install the red rectangular bar graph LEDs, hook up the optional backlighting LED with the included ribbon cable, and mount the board in your proton gun assembly.

Here is a pic of the bar graph socket with the polarity for the LEDs noted. You need to install the red leds in each bin. You can cut the LED leads to your desired height. This will all depend on the amount of room you have inside your gun body to house the LEDs.

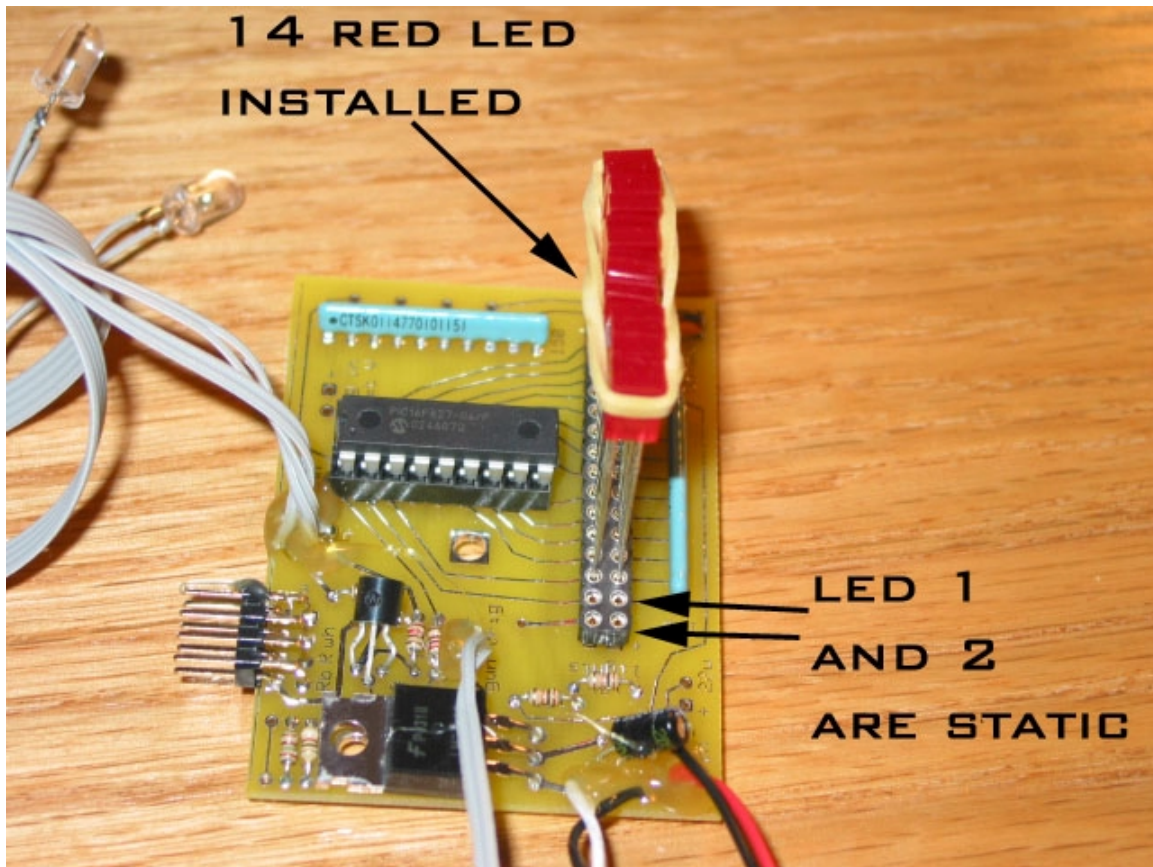


The red rectangular LEDs come with one lead longer than the other. It looks like:



TIP: The inside of the LED has a longer piece that corresponds to the + side also.

If you cut the leads even length, just press them into each socket pair (noting the polarity). Install all the LEDs as shown below. If you want to align the LEDs better, you can glue the sides together or even use a small rubber band to shape them better into your desired pattern.

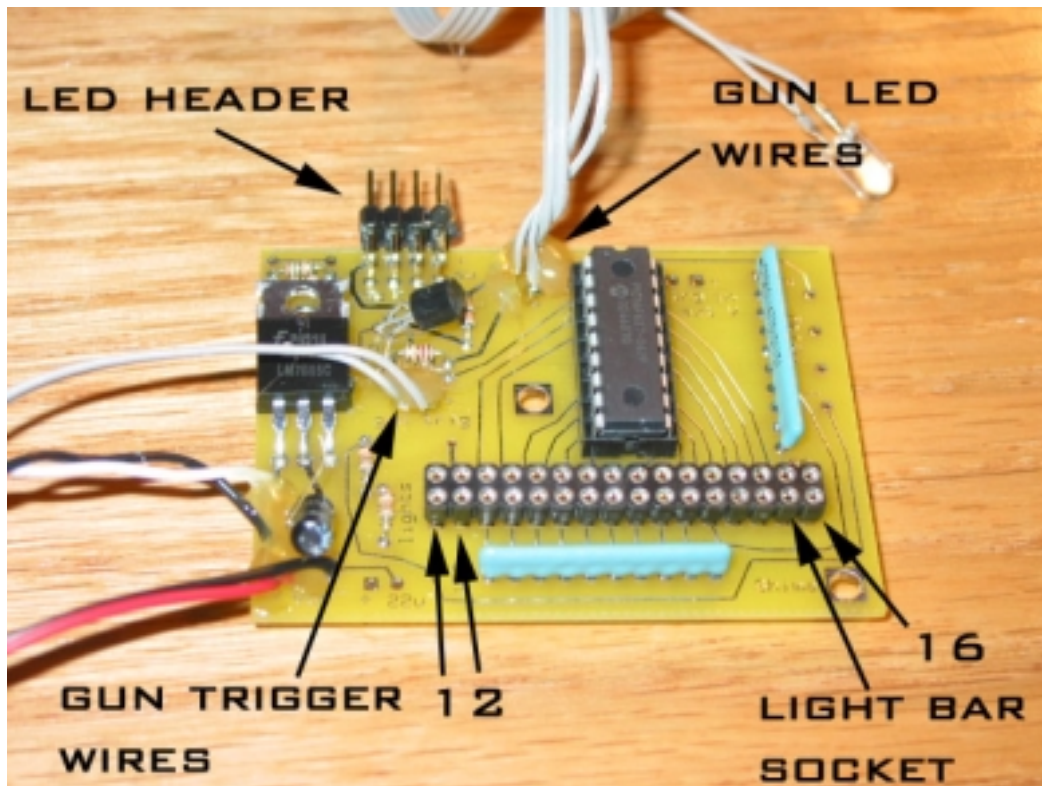


The bar graph consists of 14 sequencing LEDs and 2 static LED, for a total of 16 rectangular LEDs. The 2 static LEDs are included in case your gun assembly

has a larger rectangular hole which you need to fill. You can connect up these 2 LEDs to extend the length of the bar graph, but these 2 lights will always stay on and do not sequence like the upper 14 LEDs in the bar graph.

Gun LEDs:

The gun LEDs are already wired and installed on the board. When the gun trigger wires are shorted together, these gun LEDs flicker to emulate a proton stream. The bar graph LEDs will also sequence differently. All you need to do is hook the gun trigger wires to an appropriate pushbutton (normally open) on your gun body. See below pic to locate the aforementioned wires.



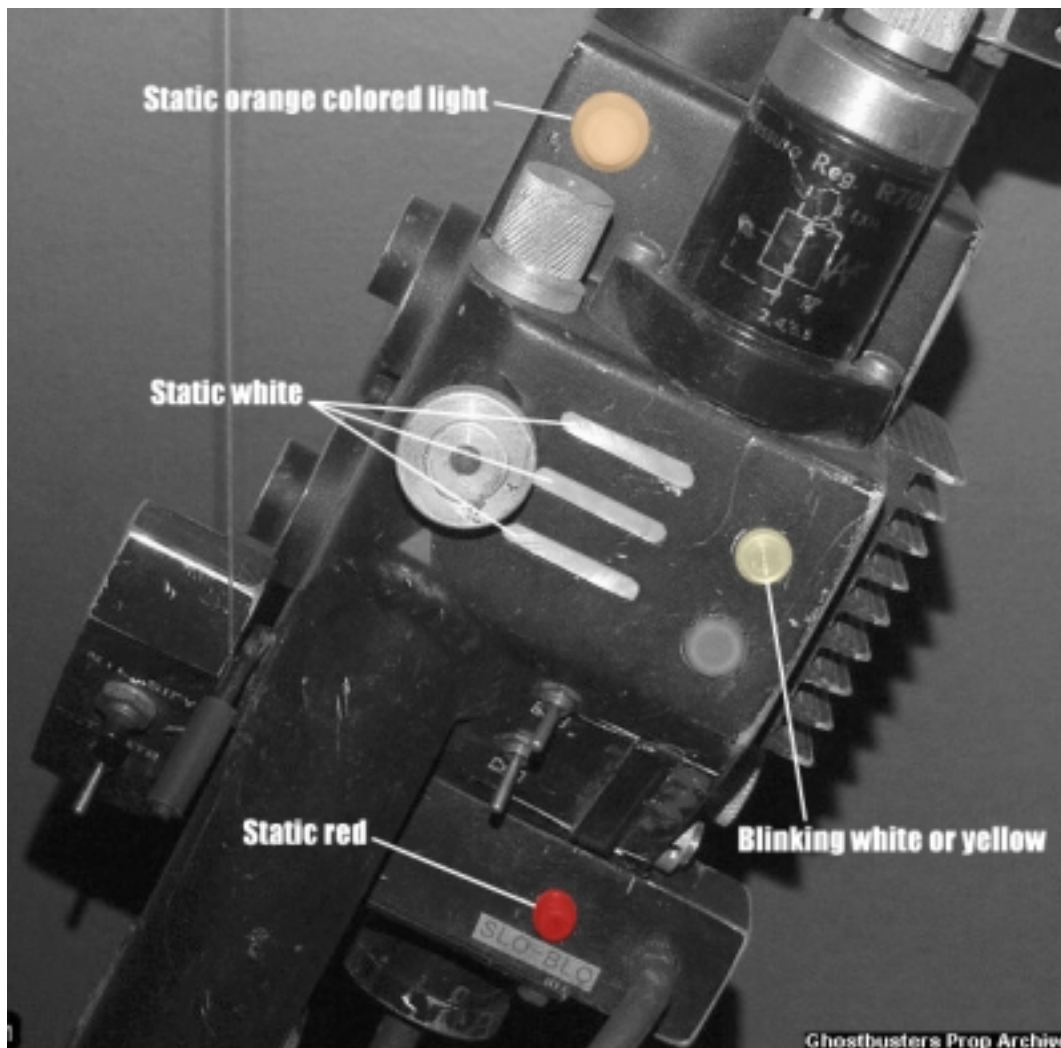
Installing optional backlighting LEDs:

The optional backlighting LEDs are accessed off the main LED header (shown above). The included ribbon cable makes it easy for you to plug in the cable, then splice the end wires and connect up (soldering is preferable) the included colored LEDs. The following extra LEDs are included in your kit.

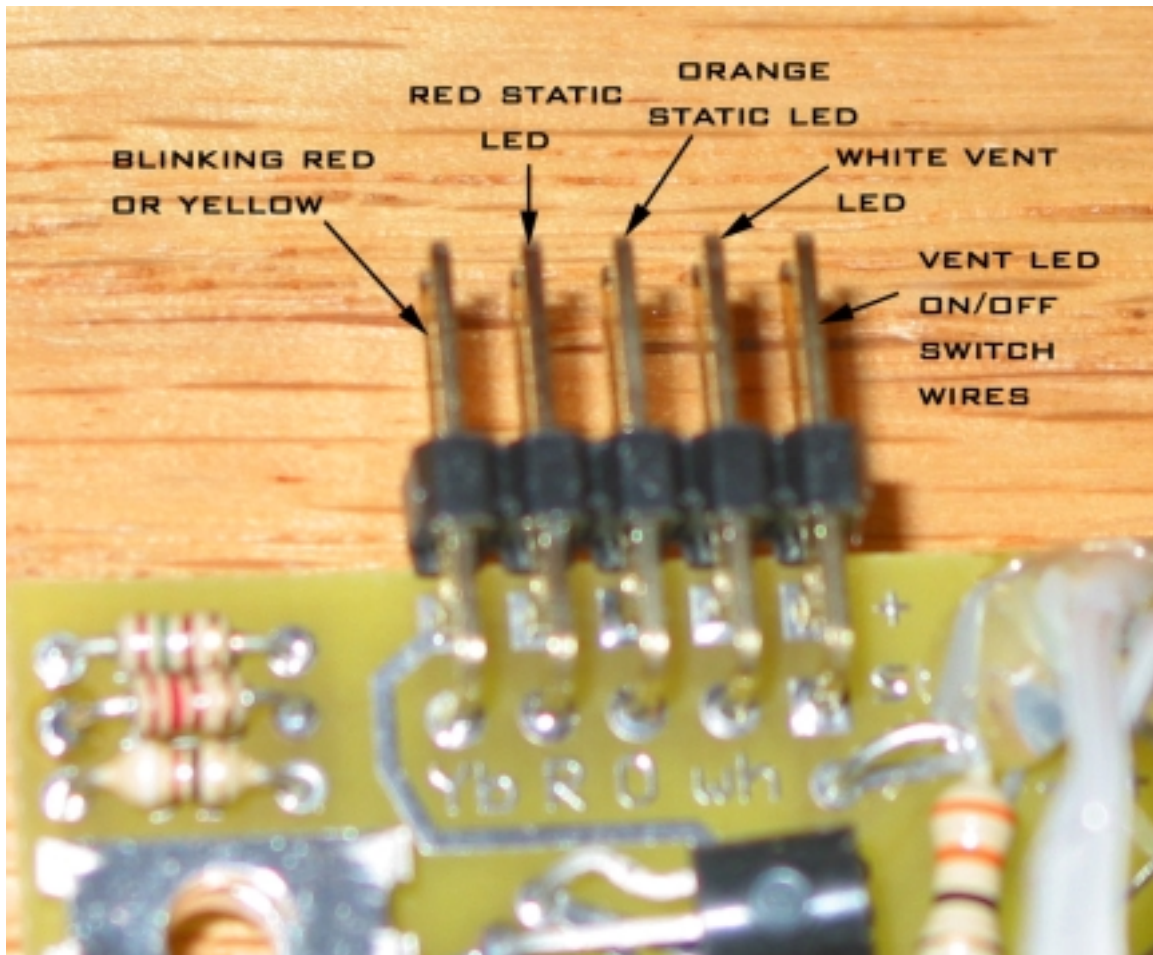
- 1) Red or yellow blinking LED
- 2) Static red "SLO-BLO" LED
- 3) Orange static gun LED
- 4) White gun vent LED

Also included on the header are 2 switch wires that allow you to toggle the white gun vent LED on and off. It is easy to take these two wires and connect them up to one of the toggle switches on the gun body, which will then activate the internal vent lights (as seen in the movie!)

The LED locations are shown here (courtesy of the GB prop archive):



Here is a closeup of the LED header pins with pin descriptions.



The first 2 pins are for the blinking LED ONLY!!! (**DO NOT CONNECT A NORMAL LED TO THESE PINS OR YOU WILL BURN IT UP!**)

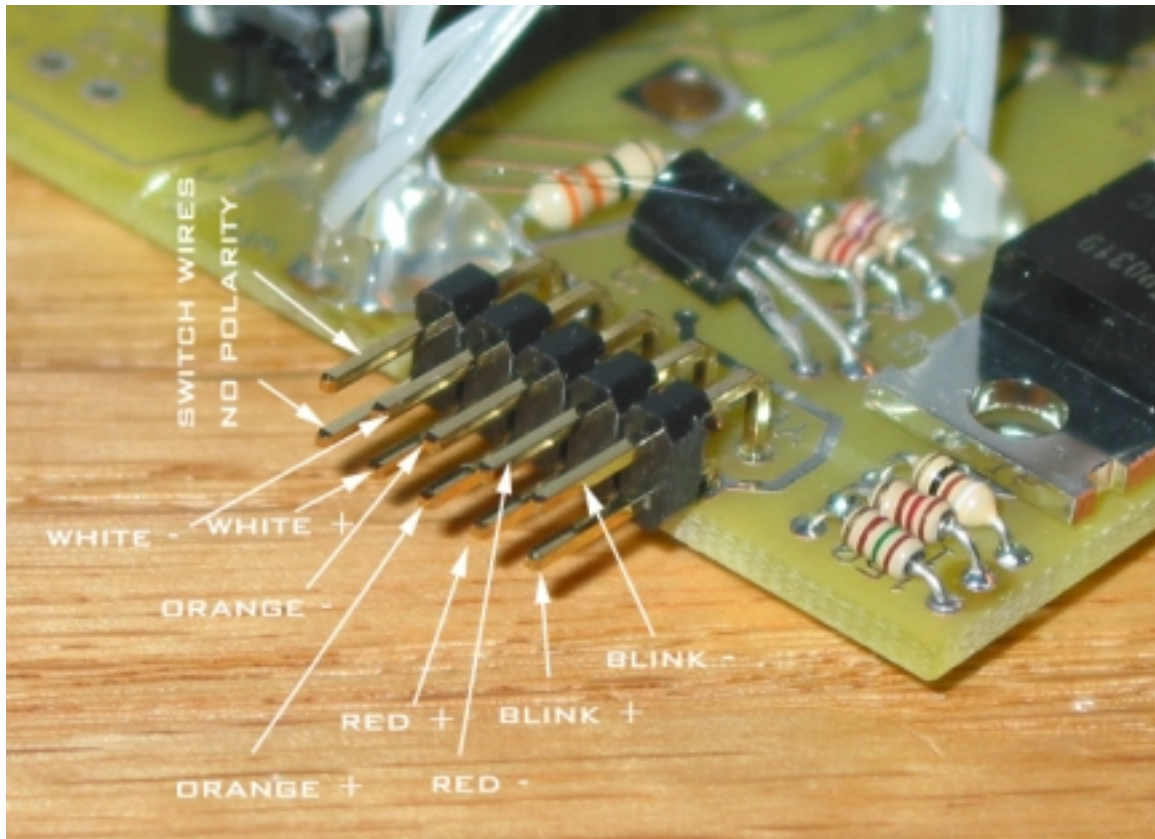
The second pair of pins is for the SLO BLO static red LED. The third pair of pins is for the orange static LED. The fourth pair of wires are for the white vent LED. And the last pair of pins is for the vent LED switch wires. The LED wires have polarity which you must obey. The switch wires do not have any polarity.

TIP: The longer lead on each of the LEDs is the positive end. The shorter lead is the negative end.

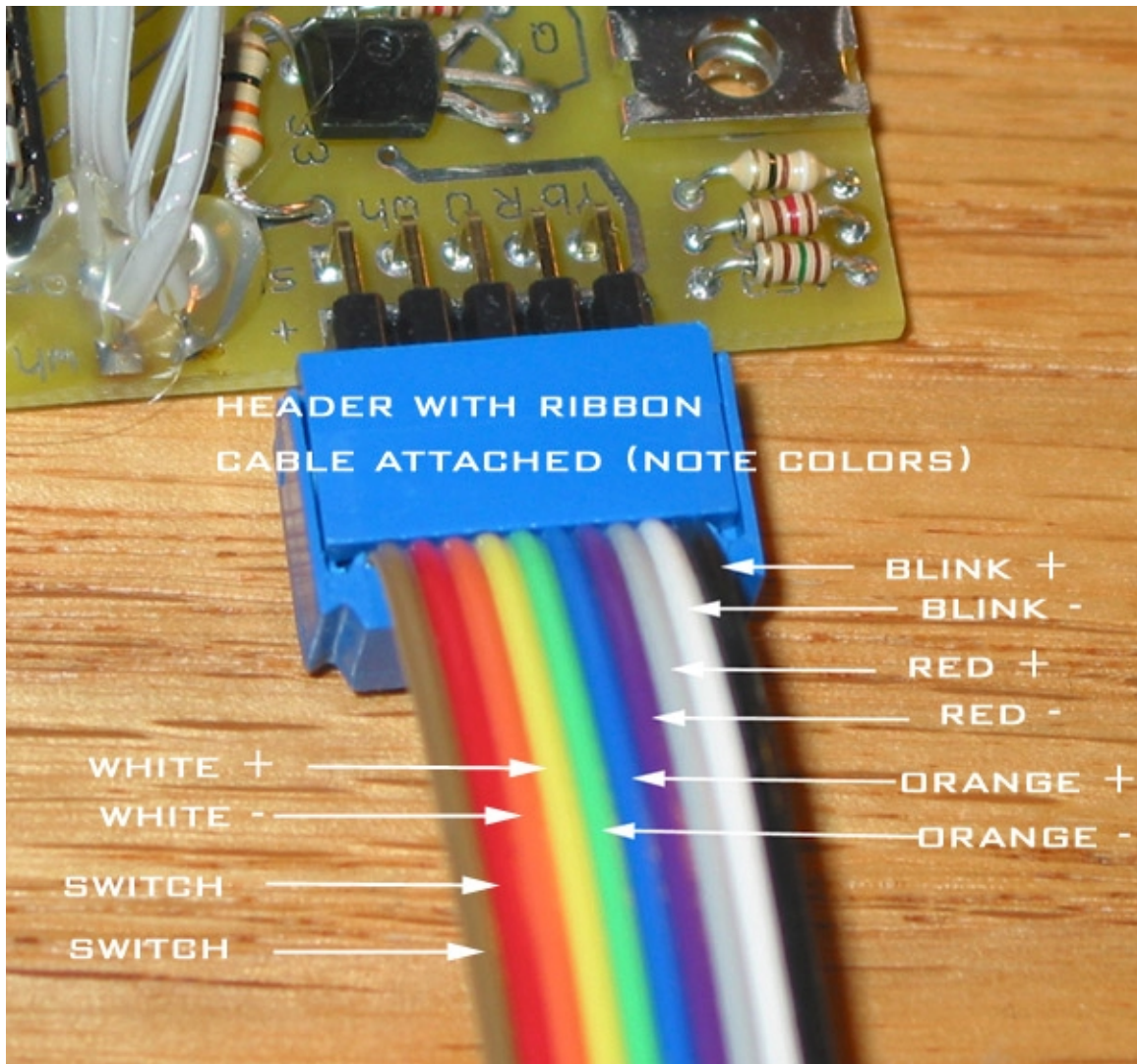
Below is a pic of the polarity of the header pins. You need to follow this diagram to connect up the LEDs correctly.

If you want to check the LEDs before you wire them up, simply power on the board and carefully place the LED (noting polarity) across the correct header pins, and watch it light up!

Note that the white LED will not light up until the last pair of switch wires are shorted together. If you do not use a switch for the white vent LED, simply splice the 2 switch wires and short them together (this will keep the white LED on all the time).



And with the ribbon cable attached, here are the pinouts. Note the color of the wires and the pins they are connected to!



After you splice the end of the wires, just solder (or attach) the proper LED. **Use an exacto knife to *carefully* splice the individual wires on the end of the ribbon cable.**

Also, you can use any LED you like (instead of the included ones), but note that the brightness may vary with different colors.

POWER SUPPLY

A sufficient power supply is 9V. So, you can use 6 AA batteries, 6 C cell or D cell batteries. You can even use a 7.2V RC car battery if you like. You must use a minimum of 6V on the board in order for it to operate. One 9V battery will work but will not last long. A 9V lithium battery will last 3x longer than alkalines. You can find other battery holders with a 9V snap connector already on them at Radio Shack or your local electronics shop. A 6AA battery holder is included in this package, which should give you several hours of use!

A rule of thumb: the bigger the batteries, the longer they will last. If your board starts acting funny, or quits sequencing, check to make sure the batteries are

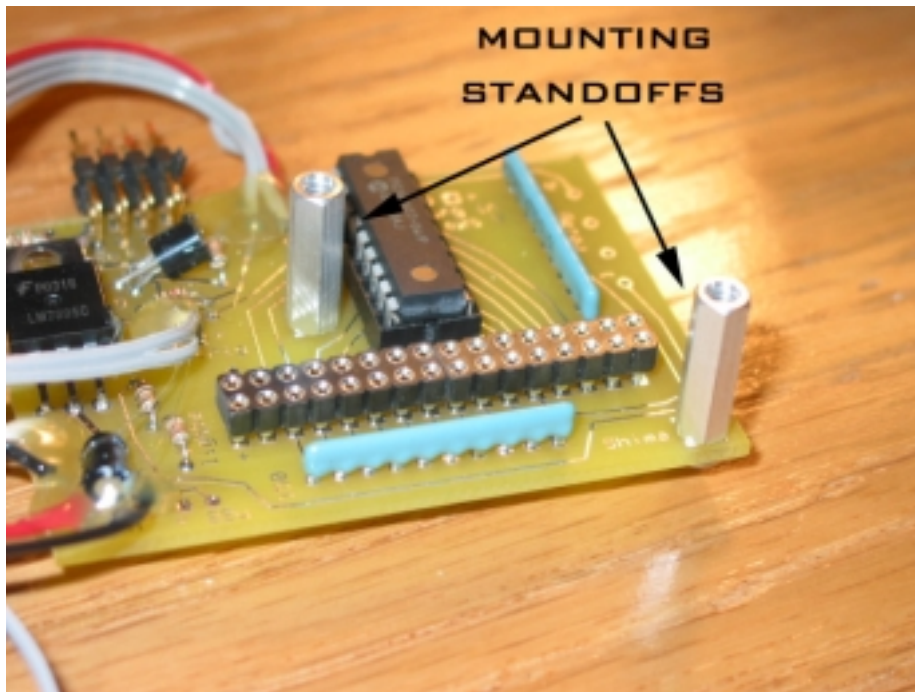
good. Dead or old batteries will cause the board to act unpredictably. Make sure you check the battery polarity before hooking them up!

MOUNTING THE BOARD

When you mount the board inside your gun body, make sure the bargraph LEDs are lined up with your rectangular slit. You can hot glue the LEDs into the socket if you want a permanent connection! Rubbing alcohol will remove the hot glue if you mess up.

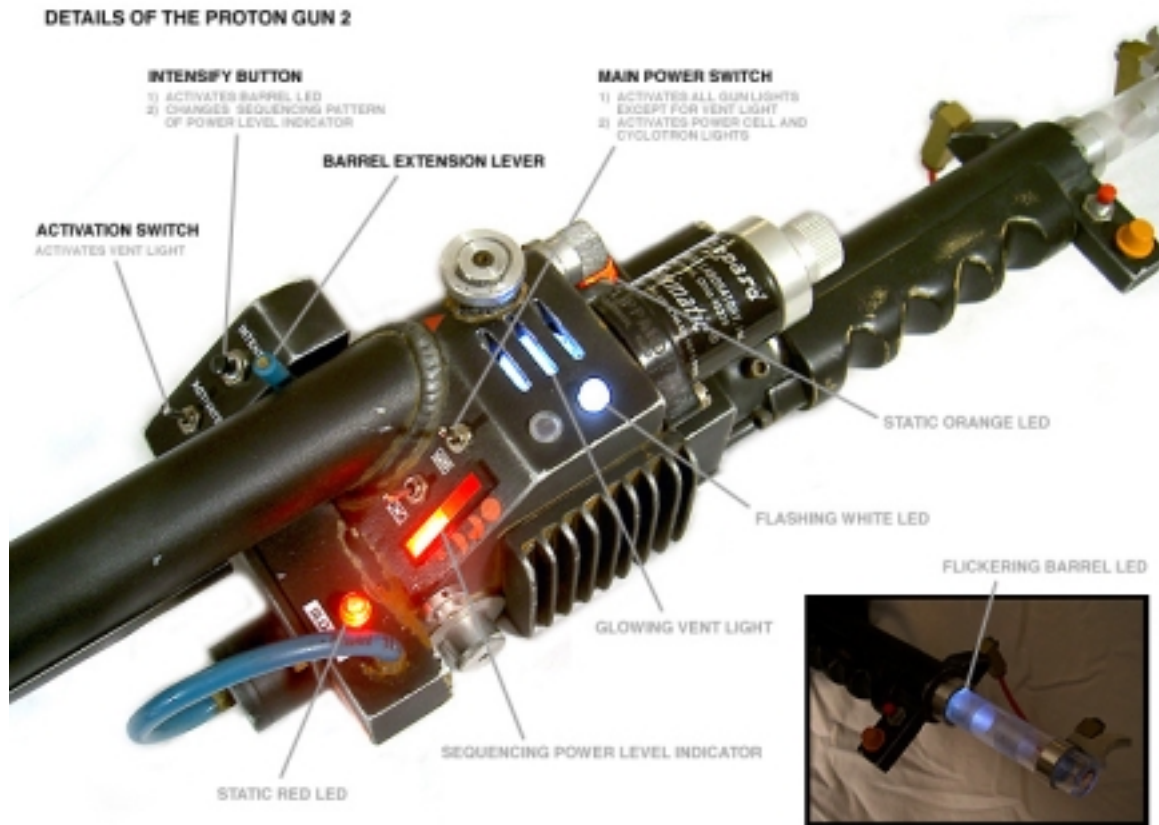
If you want to snip the LED leads so they are standing off the board, you can use the included aluminum standoffs to mount the board inside your gun body to stand away from the inside wall of the gun body. This way the bargraph LEDs still shine through the slit, but the board actually sits off the gun body. You can hot glue or screw in the opposite side of the standoff to the gun body to secure the board in place.

Here is a pic of the standoffs installed:



Turn on the board and make sure the bargraph LEDs are sequencing up and down. When you short the gun trigger wires together, the 2 gun LEDs (white and orange) should flicker rapidly, and the bargraph LEDs should sequence differently. The static backlighting LEDs should be on, as well as the blinking LED. If the board is working properly, you are done!!

Here is a picture of a fully installed kit in a homemade proton gun kit. (pic courtesy playskool):



You can see more pics at http://www.hyperdynelabs.com/gb_wand.htm

NOTICE: There is no warranty on kits!! It is your responsibility to install the board. Kits cannot be returned! This kit can consume alot of current. Be careful if you plan to use a battery source that is capable of delivering alot of current. Contact a professional if you need assistance. Hyperdyne Labs assumes no responsibility for the misuse of this kit.