

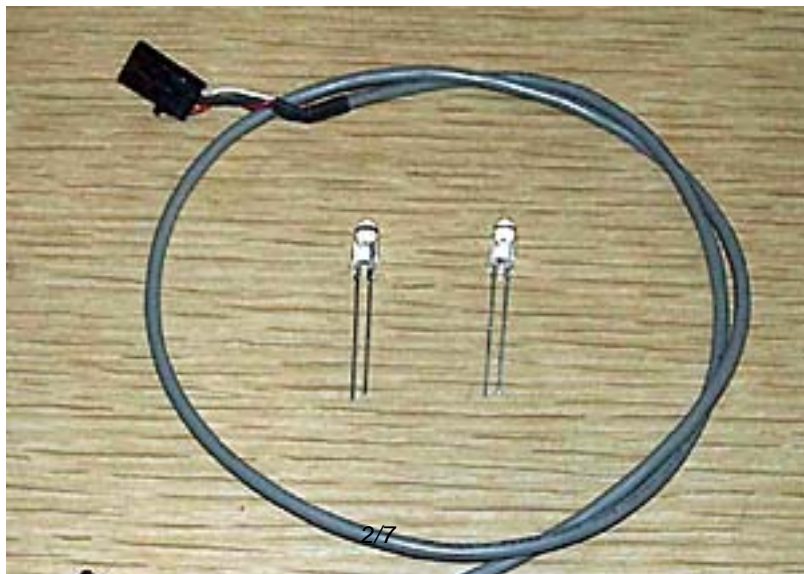
## More USB LED Mods

Shhhh! I have been hiding...the Demon Editor has been hunting me! Eventually he WILL catch me (he is really good at that) but I hope to placate him with this mod I have been toying with...for about 30 minutes. It all started with Insulglass...you see he has been relentlessly picking on my "Hulk Green" cooling fluid. I kinda liked it...reminded me of the Borg and hence **7 of 9** ... YUM... What? Oh yah...the needling about "Running puke" through my primary cooling loop finally got to me and I switched to Blue UV dye courtesy of Danny at DTek (I love those guys!).

But the LED's I was using to backlight the Bay Reservoir were very green and ruined the effect. So I removed them...then the reservoir looked ... boring. Looking for a solution I wandered over to the place I love to hate; Fry's in Manhattan Beach, Ca. While there I found some of those Lazer LED's we have previously reviewed for about \$22.00 – much too expensive having acquired terminal cheapness from Insulglass, why I nearly passed out with joy when I found an ECS K7S5A mobo for \$18.61 there last week. Here's proof!



I decided I could do it better, cheaper, faster and especially cheaper. I went to K&J Electronics in Westminster, Ca – a fine source for all your bits and pieces, and bought two hi-intensity 5mm 3.5v LED's for about 5 bucks a piece. Then I wondered about how to step down the power from a Molex to run them ... but since I am a lazy guy that would be too much work so I decided to take my power from the internal USB extension pins. The USB power lines provide 5v of power. Positive is typically the leftmost pin, negative the rightmost of the 4 primary pins (sometimes there is a 5th pin that is used as a "key" but really does nothing) and the two center pins carry data but we don't need those. Here is what you will need for the mod:

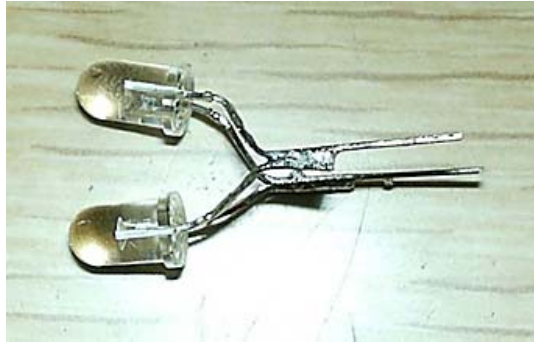


Two 3.5v Hi Intensity 5mm LED's and an audio connector cable, well, you also need some epoxy, a soldering iron with solder, a bit of wire and some electrical tape if you feel like it – but most compugeeks got that stuff lying around anyways. First mark the positive leg (the longer one) near the top with a red marker so you don't lose track of what's what. Then you will cut one of the LED's legs short, after that you need to bend the legs into a "V" shape while bending them up about 4mm. The end result should look like this:

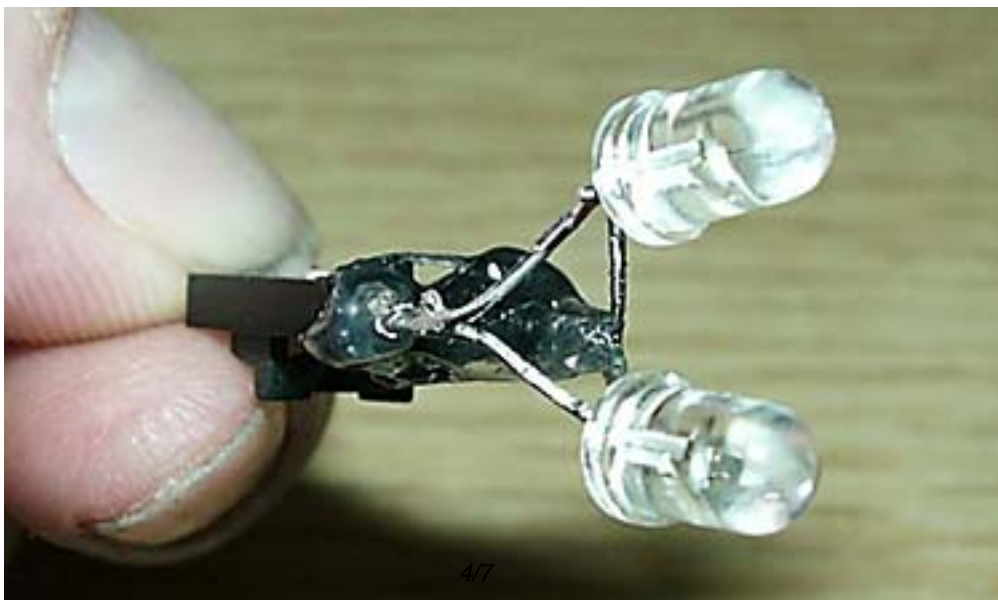


Note the red ink on the cut leg of the upper LED...that is the positive leg...better to mark them then try to find out later, after you've welded the LED'S! Next we weld them together... why? Well...at 5v for a single LED you will get a really bright LED but it won't last the rated 10,000hrs...more like 100 I have been told. Being lazy I don't want to complicate things with a resistor so by welding two together the USB line delivers about 2.5v to each...providing less light but greatly extending the life (100,000hrs estimated) of the LED's, and no added complications with resistors. There is no easy way to weld these pieces...someone smarter than me has gotta figger that out! I just fiddled with it till I got it right. P.S. Don't touch the hot part of the 45w soldering iron...that is a Bad Thing To Do. When done you should have something that looks like this:





Remember that the area where the legs of the LED's are welded will not fit into the audio header we are using for a power lead so I kept the area welded to 3mm to prevent too much "outhead". Now plug that sucker into the sound cable like this:



Be sure you place positive and negative legs of the LED into the properly color coded sides of the header. There is a black (ground) and a red (positive) wire; we will use these as a guide to prevent improper installation when we get to the mobo USB pins. Now locate your USB extension pins and use the 4 pins starting from the left, ignore any rightmost 5th pin. Plug that puppy in and remember to place the red wire at the leftmost pin! It should look like this:



Note that the left wire is red and connected to the leftmost pin...this corresponds to the positive connection of the LED...the white wire here is used as ground but usually that wire is black. Ready to fire that sucker up? OK!



Success! The lights are not as bright as they should be since they are running a volt short of optimum but they are still pretty bright and the undervolting hasn't prevented them from getting dang hot! I revised my plan to use hot glue and electrical tape when the glue started to melt from the heat! I coated the exposed wires with epoxy to insulate them and then fabricated a wire bracket to hold the assembly in place while the epoxy cured. Here's a look at the admittedly crude (yet effective) installation:



And here is a finished view of the mod:



Total time spent: about 30 Minutes ... it took far longer to write the article! Total cost: \$10.00 ... using a single LED you will get a brighter light but much shorter lamp life but also save \$5.00! This mod was certainly effective, easy and cheap...and you can place these LED's behind grills, side fans, etc. Give it a try and let me know how it goes for you. As for me...I hope the Dreaded Demon Editor is pleased with my offering!

Outcast

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