

## Modding an LCD1602 I2C/IIC Adapter Board to enable external PWM LCD backlight control

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A big disadvantage of prototyping with LCD1602 character LCD displays is the amount of I/O-pins you need. Of course you can make use of the 4-bit control mode instead of the 8-bit, but you still need at least 7 I/O-pins.

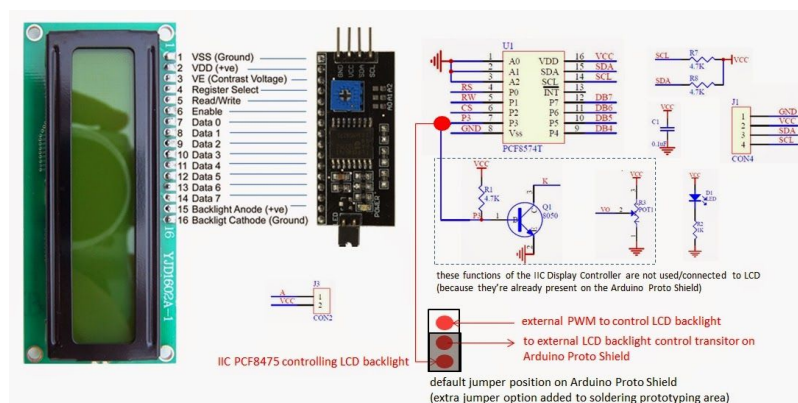
It's a better idea to use a cheap IIC/I2C adapter board. This enables you to control an LCD (including the backlight) with only 2 I/O pins (SDA & SCL).



These adapter boards contain a transistor driver to control the LCD backlight. The transistor base is driven by an I/O-pin of the onboard PCF8574. This works great to enable or disable the backlight, but it's "on" or "off". Dimming is not possible because the PCF8574 does not support PWM output.

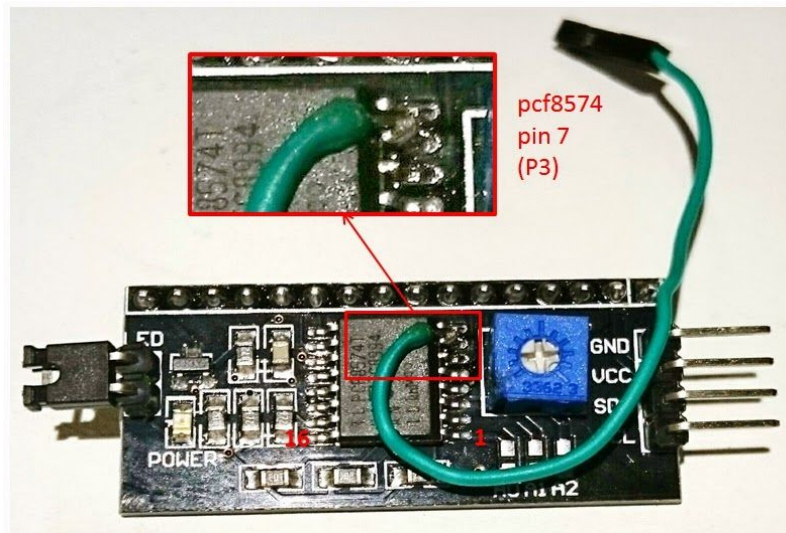
For prototyping purposes I decided to use an external transistor driver on my Arduino Proto Shield.

Via jumpers I can choose what I want: ON/OFF (standard setting) via I2C or Dimmable via external PWM. This is how I did it.



First I had to find out which PCF8574 pin was driving the LCD-backlight transistor. After a quick search I found out that is it pin 7.

So, to bring that signal out to my Arduino Proto Shield, I had to solder an extra wire to the PCF8574.



That's it! Happy soldering!