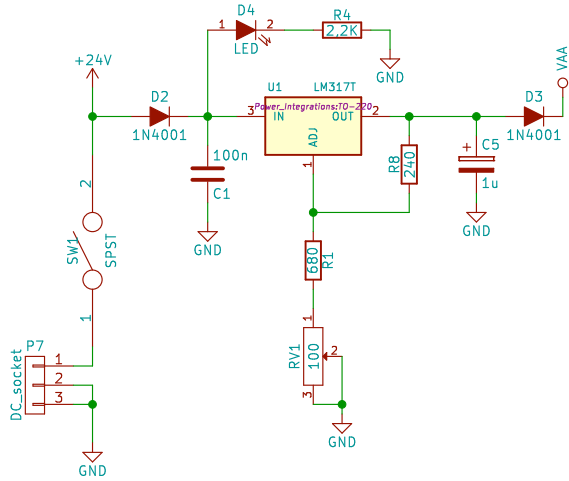
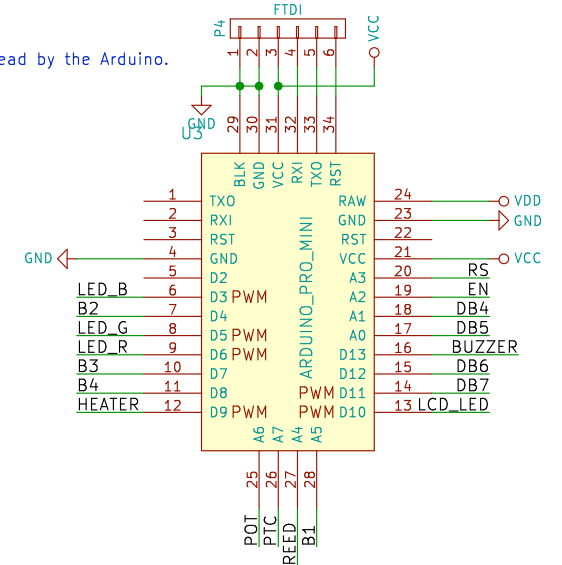
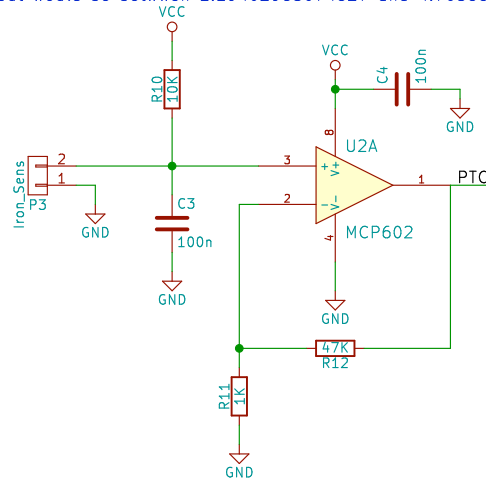


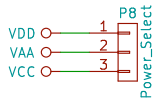
3.6 Ohm on white-blue cables (heater)
46 Ohm on red-green cables (PTC)



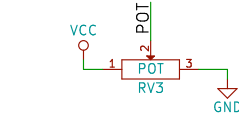
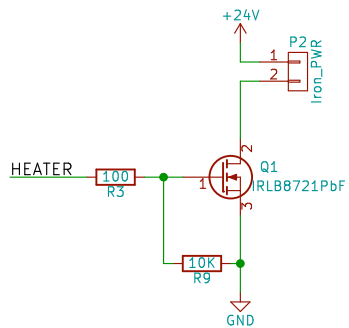
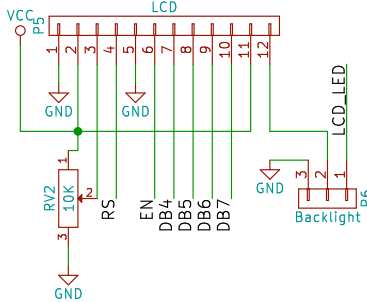
The Iron_Sens is a variable resistor based on the iron's temp. The Iron_Sens and R10 create a voltage divider. The voltage on V+ of the op-amp is calculated using this: $V+ = Vcc \times (Iron_Sens / (Iron_Sens + R10))$. I measured the Iron_Sens which was between 50–200 Ω while the iron was heating. So the V+ was between 0.0248756218905473 and 0.0980392156862745. The output of the op-amp is calculated using this: $Vout = Vin \times Gain$ and $Gain = 1 + R12/R11$. I used R12 = 47K and R11 = 1K to have a Gain = 48. This way Vout would be between 1.19402985074627 and 4.70588235294118 which could be read by the Arduino.



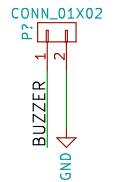
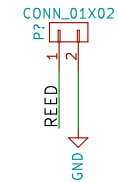
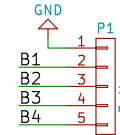
short VAA-VDD, 5-12V from LM317 to RAW pin, VCC from pro mini regulator to other components.
short VAA-VCC, 5V from LM317 on all components, pro mini regulator not used.



short 1-2 - brightness adjustment with mcu
short 2-3 - fixed brightness



Make use of internal pullup resistors for push buttons



reed switch and buzzer don't have connectors on PCB.
I have soldered cables directly on the pro mini.