

# RGB Matrix Screen

Raspberry Pi Setup  
[ Hardware ]

# Overall Steps

1. Gather Parts
2. Solder Daughterboard
3. Insert Pis into bottom half of Case
4. Assemble 5x segment drivers
5. Assemble 1x Master controller

# Safety iconography



Review and adhere to all safety warnings and procedures



Impact resistant eye protection required

# Safety warning



Some procedures require the use of a Soldering iron & cutting tools. Soldering irons and their materials (Solder, flux, etc..) present safety hazards such as toxic smoke, burn hazards and even fire.



**The following safety rules are non-negotiable and must be followed!**

- Execution of these procedures must be followed within well-ventilated areas.
  - Prepare your work surface so that it will not be damaged by molten solder. Cardboard provides great protection for solder workstations.
  - Never Touch the tip of the soldering iron
  - Always solder in a well-ventilated area. Open windows and use a fan where possible.
  - Never solder over carpet or rugs areas
- Required safety gear:
  - Impact resistant safety glasses
  - Closed toe footwear
  - Long-sleeve shirt
  - Pants

Further Reading: [https://safety.eng.cam.ac.uk/safe-working/copy\\_of\\_soldering-safety](https://safety.eng.cam.ac.uk/safe-working/copy_of_soldering-safety)

# Required tools & Materials



Soldering Iron & Solder



Small Screwdriver



Flux



Solder Wick / De-solder braid



Wire Stripper



Diagonal Cutter / Flush Cutter



Safety Glasses

# Grab all parts & group together



Raspberry Pi Model 3b+  
Quantity 6



Raspberry Pi case  
Quantity: 6



Dual CPU Fan  
Quantity: 6



Electrodragon RGB Matrix  
daughterboard  
Quantity: 5



Dupont Wire



GPIO Pin extenders  
Quantity: 5

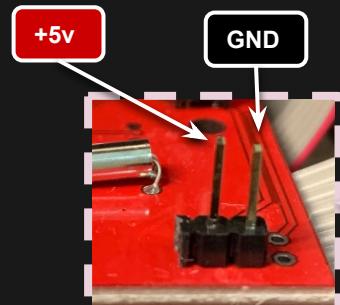


PCB Male-male pins

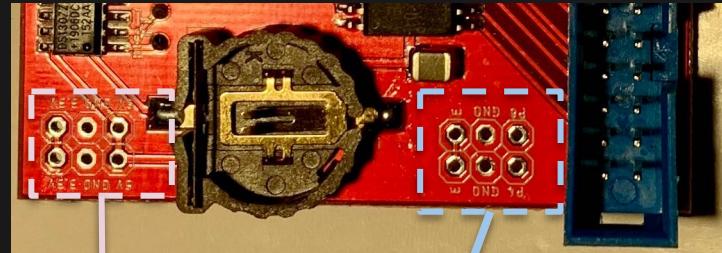
# Solder Daughterboard

For each daughterboard board:

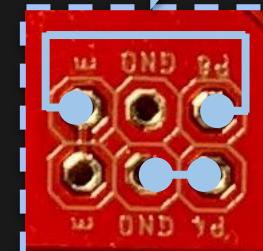
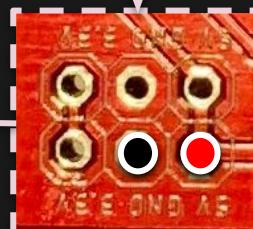
1. Jumper wires connections using dupont wires
  - a. Jumper P8 to E
  - b. Jumper P4 to GND
2. Solder 2x Male-Male PCB Pins to the +5V & ground **under** the board.



2: Pins under the board (flipped 180deg)



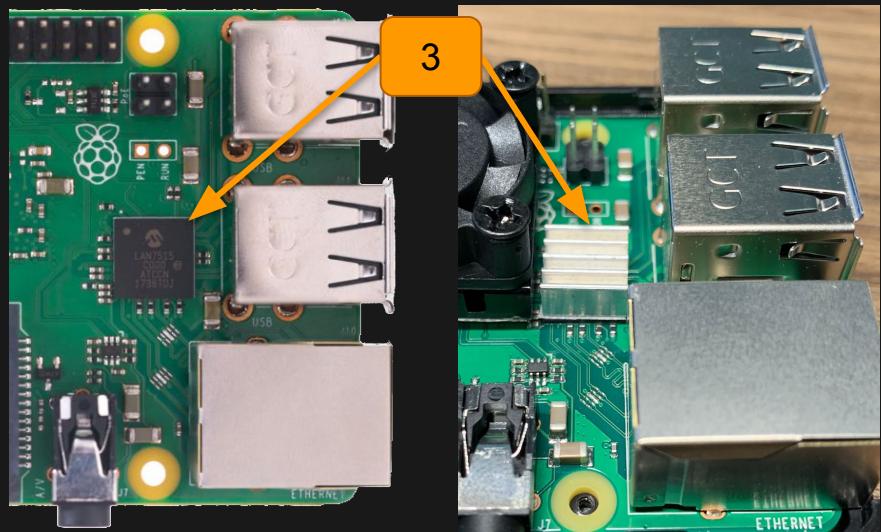
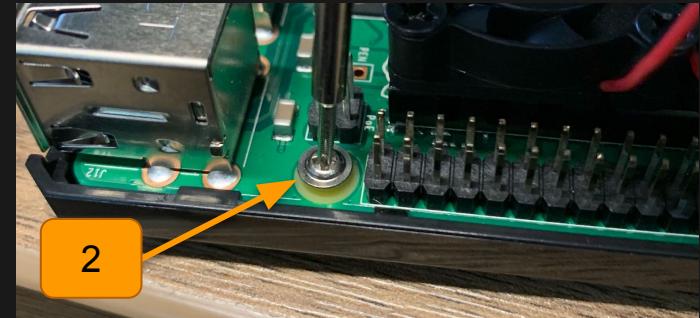
2: Where to solder pins



# Insert into case (ignore this)

For all six Pis:

1. Align Pi with bottom of case markers & snap in place.
2. Insert 4 x screws. Careful not to over-tighten!
3. Attach small heat sink to USB & Ethernet controller chip. Make sure to align it as illustrated to allow good airflow.



# Assemble Segment Drivers

Perform 5x

1. Attach Fan. Make sure to leave some room for the GPIO Pins.
2. Gently attach GPIO Extender
3. Gently attach Daughterboard
4. Connect Cooling power to daughter board. Be sure to attach +5V (red) appropriately.

Write a single digit (1 - 5) on top of the Network Connector on each of these Pis. This will be useful for configuration and final assembly.

