2. Assembly manual

WHAT'S IN THE BOX

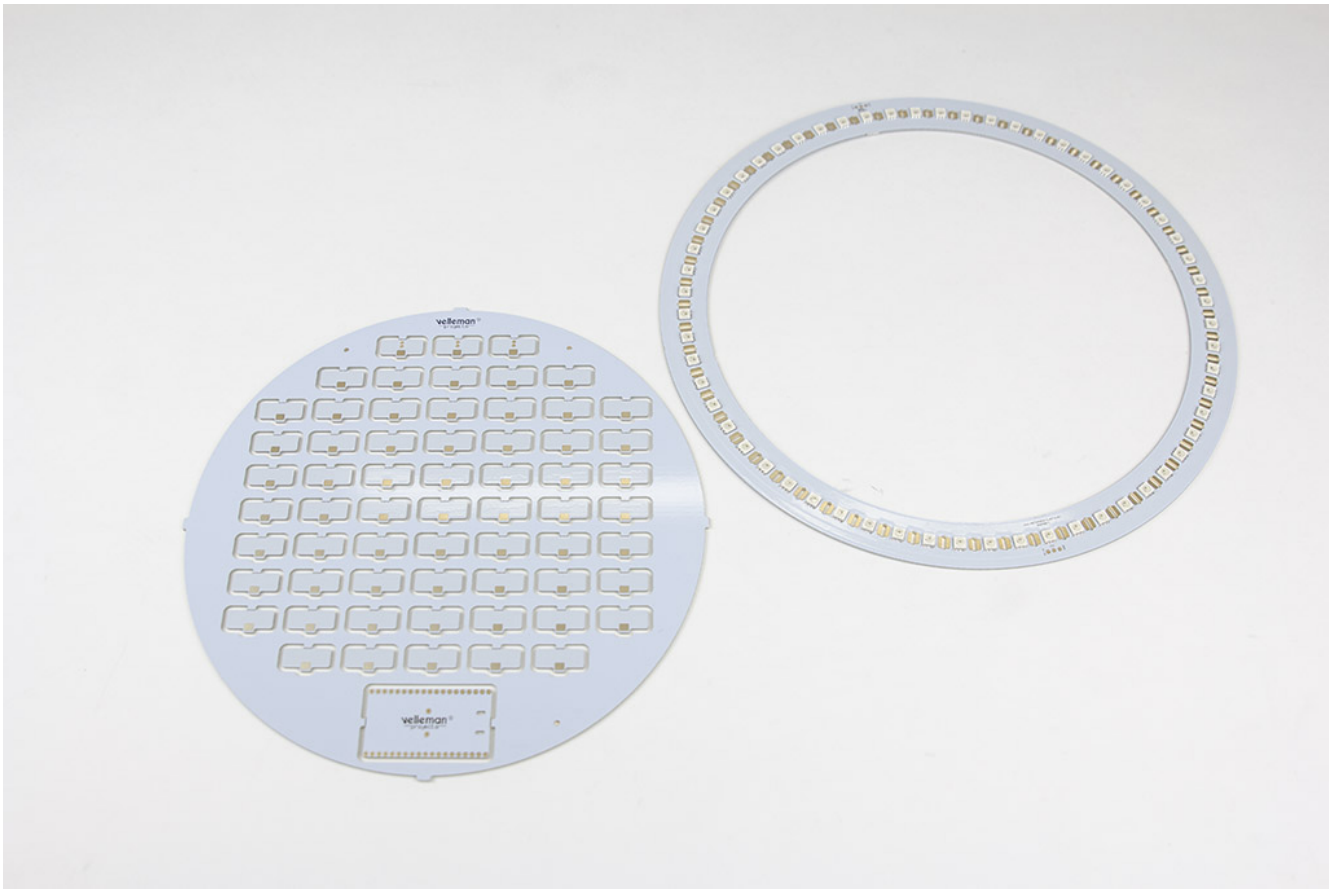
- PCB LED ring with 60 pre-assembled RGB LEDs, light blocking pads and an ESP32 connection board
- data cable
- ESP-32
- 5V 2.5A (12.5W) power adapter with EU, UK, US, and AU plugs included
- 2 x 19P female header
- zip tie

PREPARATION

We will start by removing all PCB's from the panel; the LED ring (the outer ring with pre-assembled LEDs), the ESP32 connection board PCB and the 72 light blocking pads.

Step 1: start by removing the large ring PCB with all the LEDs, because this is the most fragile one. First, use a blade knife to cut halfway through all four mouse bites (on the front- and backside) until they are thin enough to crack. Carefully push the ring PCB away from the inner panel.

Be careful not to damage the PCB or the LEDs or yourself!



Step 2: cut halfway through the two mouse bites (on the front- and backside) of the connection board PCB and remove it.

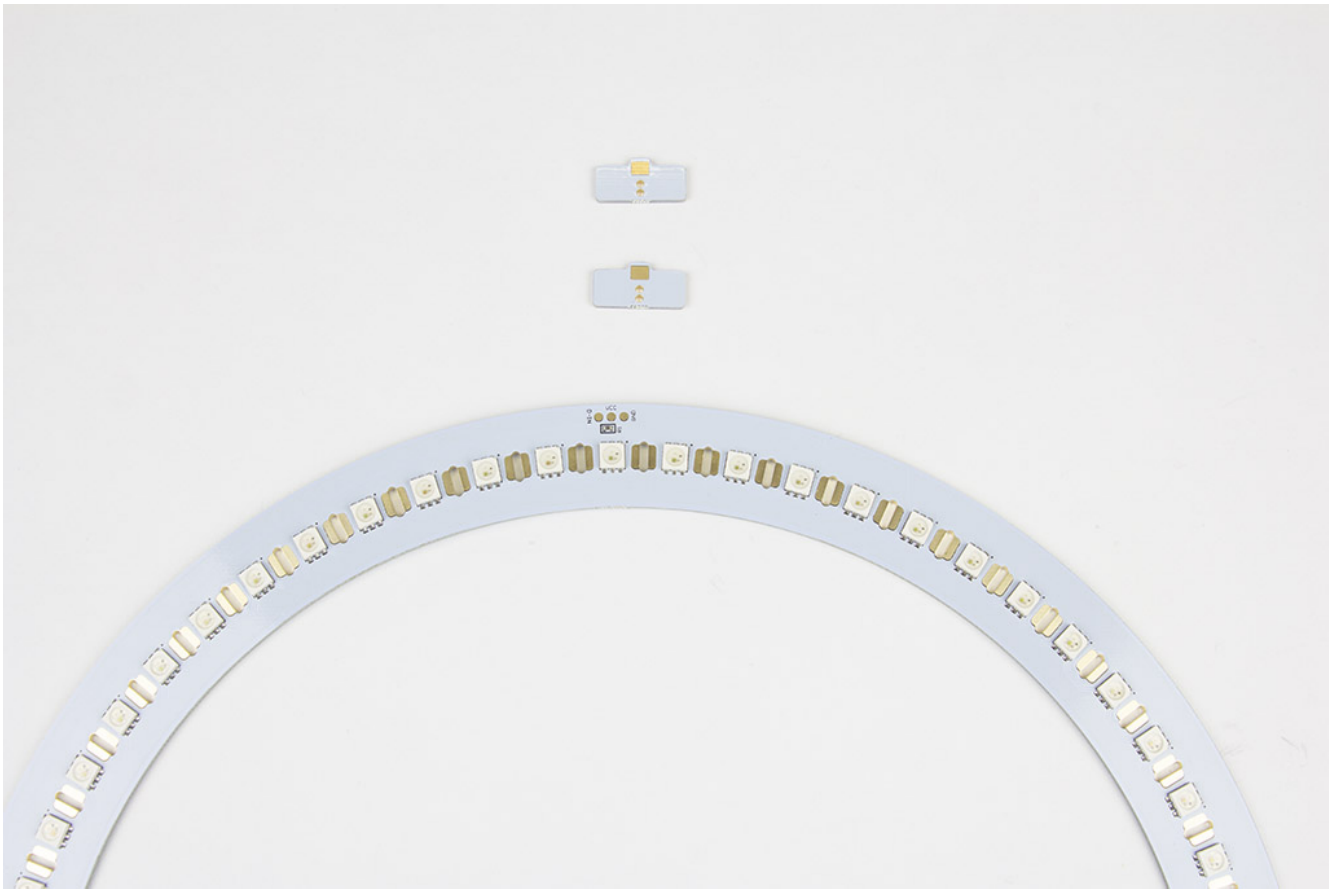
Step 3: lastly, remove all the light blocking pads. Again, start by cutting halfway through the mouse bites (on the front- and backside) until they are thin enough to crack.

Step 4: all PCB's will have sharp edges where the mouse bites used to be, it is advised to sand these parts with some sandpaper or a file until they are smooth.

ASSEMBLY

Step 1: start by looking for two light blocking pads that have two small holes in them. You can use these holes to mount the clock onto a wall by a thin wire. This will be explained later on in the manual.

When soldering the pads into place, you will need to place these two pads on either side of the LED right underneath the connection pads for the cable as shown in the middle of the picture below (not beside the LED underneath the connection pads and the website and order code).



Note: all pads will be placed between the LEDs!

Step 2: place and solder one pad at a time, on **only one side of the pad** ! This way you will still be able to adjust the pad to straighten it! (there should be a spare pad left)

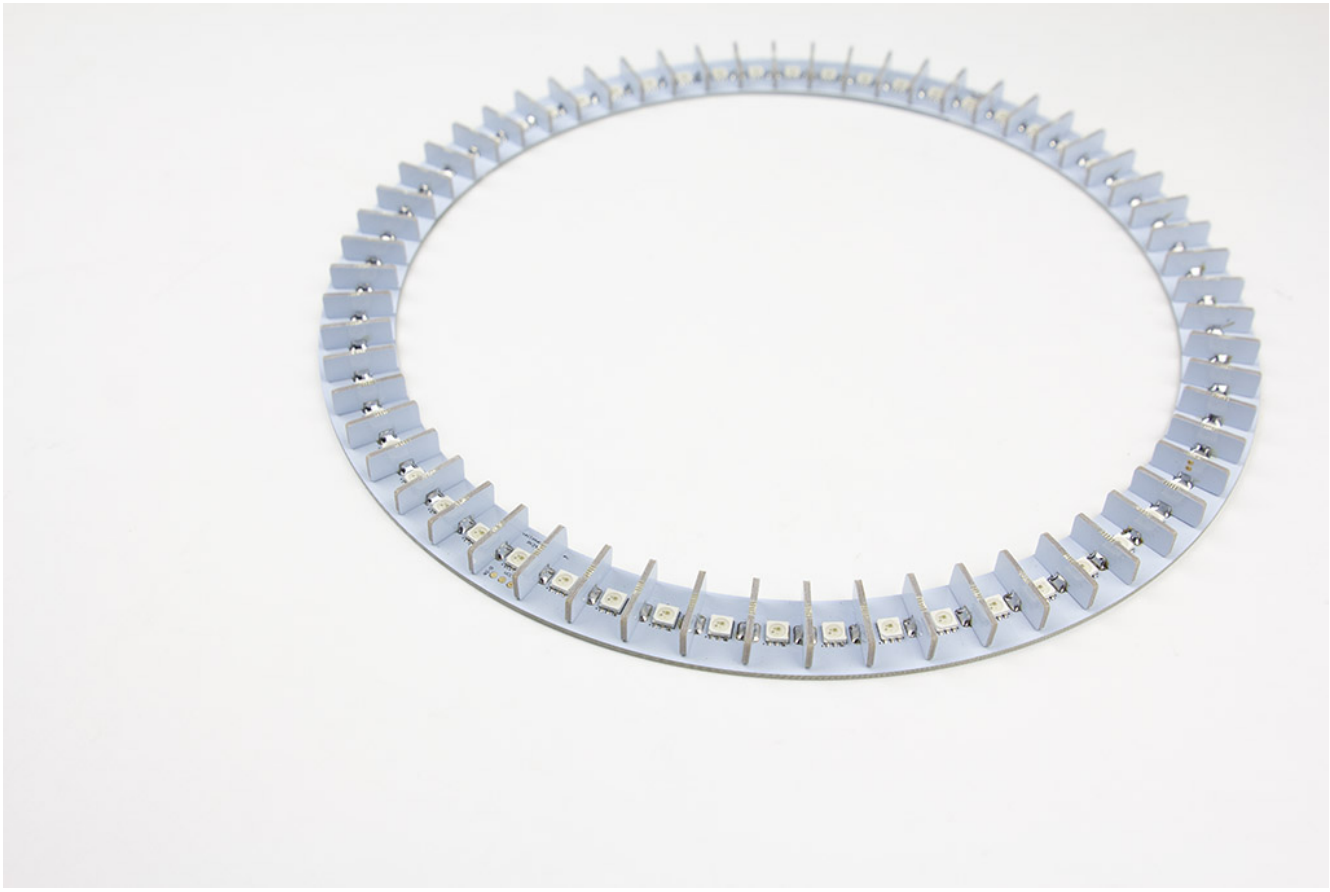
Tip: use 1mm solder tin and be sure to use enough solder so the solder pad is completely filled.

Warning: be careful not to touch the LEDs with your soldering iron! This may damage the LED!

The LED ring should now look like this.

Step 3: now that all pads are soldered on one side, take a good look at all of them to see if they are positioned perpendicular onto the LED ring. You can do this by checking whether or not there is a gap between the pad and the LED ring and by placing the spare pad next to the soldered pads to compare the angle. If a pad is not straight, reheat the solder, straighten it and remove your soldering iron so the solder can solidify.

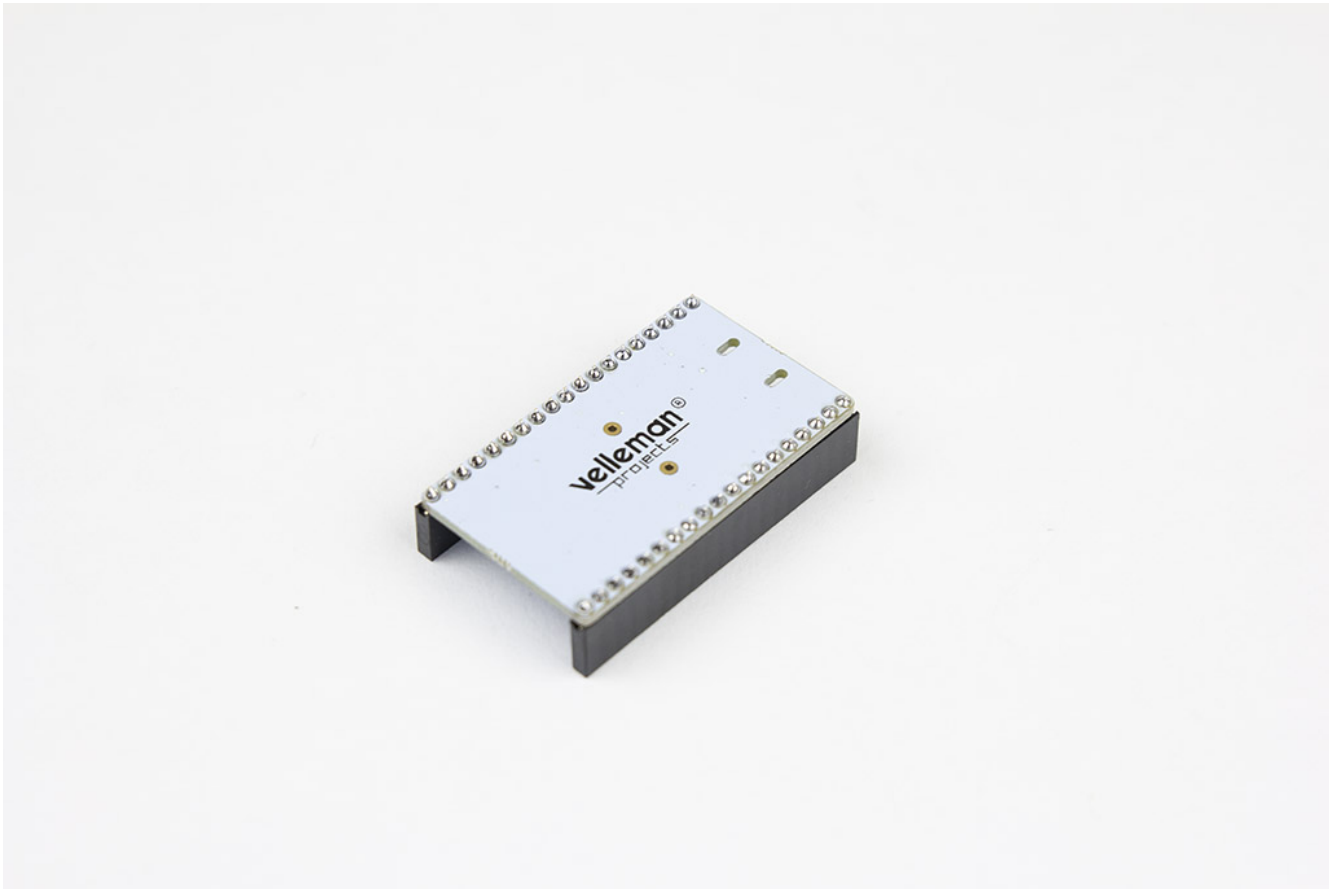
Step 4: once you have straightened all pads, solder the other side of the pads.



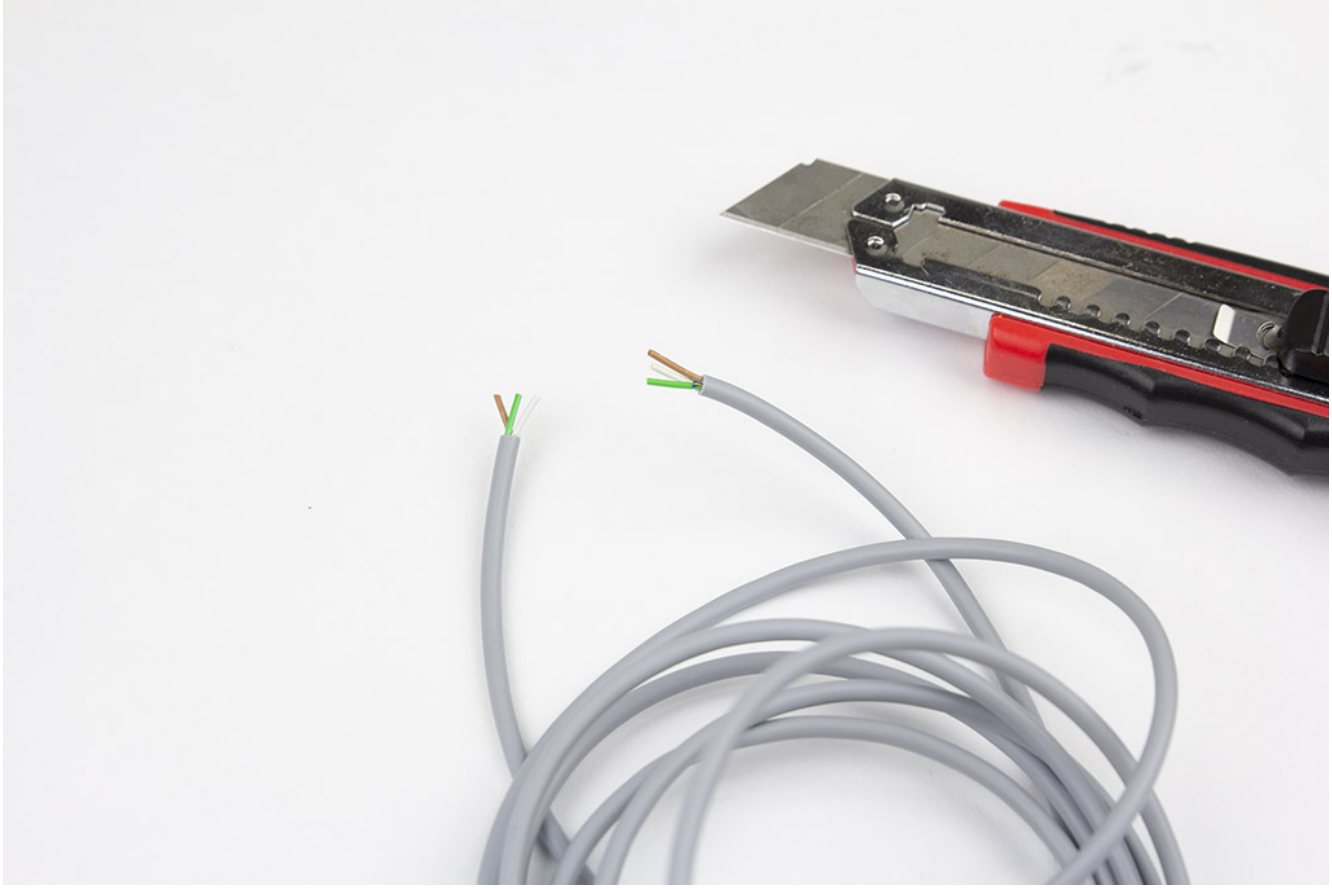
Step 5: solder the two female headers onto the connection board as shown in the picture. Note the side of the PCB!

Tip: place both female headers into place and solder only one pin. Then straighten the headers if necessary and solder the rest of the pins. If the headers are not placed straight, it will cause problems when connecting the board to the ESP32 board. You can test whether or not you have done a good job by plugging the ESP32 into the connection board. If you can do this

smoothly, you've done a good job!



Step 6: strip both sides of the data cable carefully by cutting through the outer layer, about two centimeters from the end of the cable. Be sure not to cut through the cables underneath!



Step 7: strip the three cables on both side of the data cable with strip pliers or normal cutting pliers. The stripped wires should be about 5mm long.

Decisions decisions! The clock needs to be mounted on a wall, therefore, you will have to decide whether the data cable will go downwards (towards the floor) or upwards (towards the ceiling).

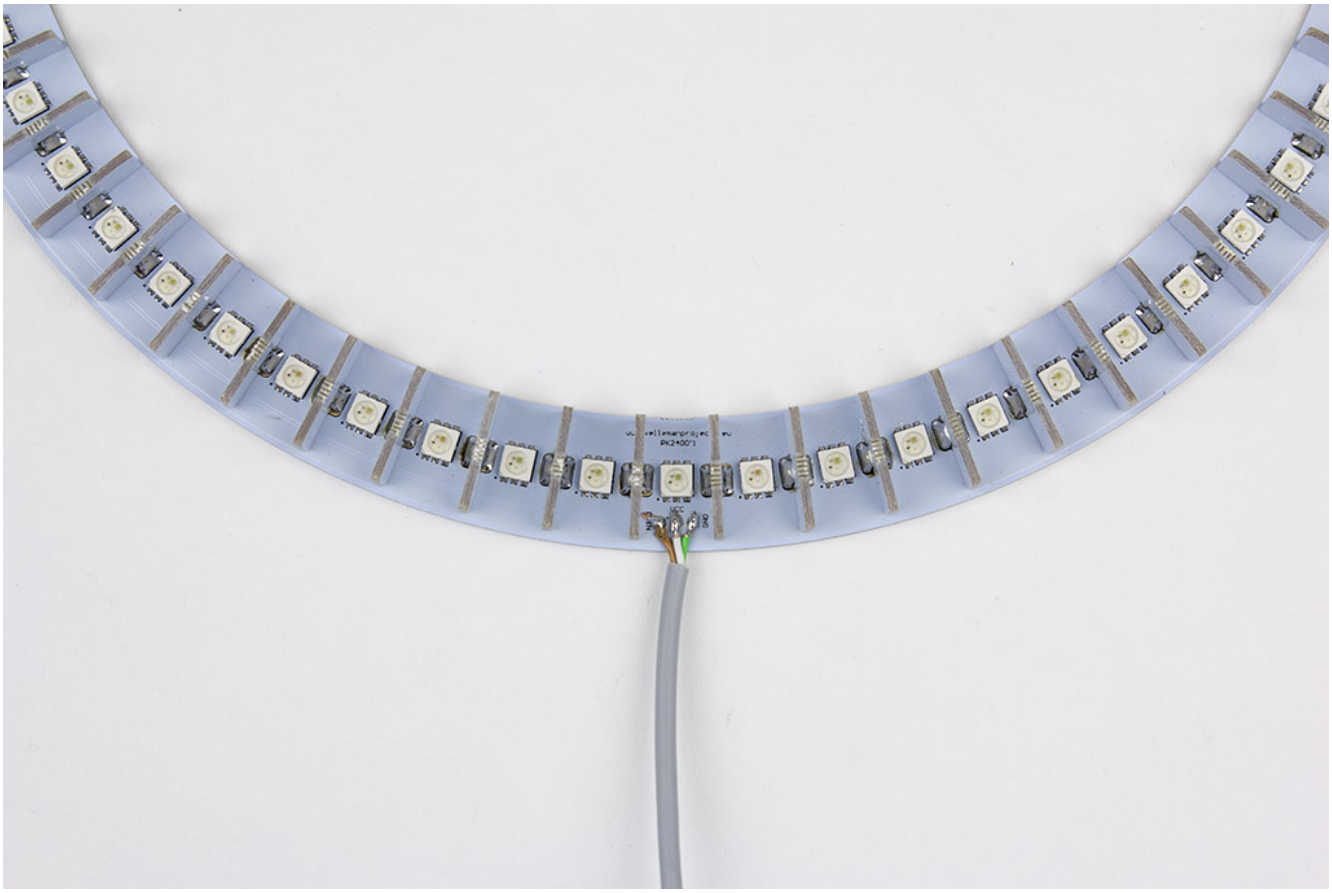
Step 8: if you want the cable to go downwards, you will need to solder the cable onto the solder pads on the bottom of the LED ring, near the website and order code print. If you want it to go upwards, you will need to solder it onto the solder pads on the top of the LED ring, between the light breaking pads with holes.

We advise you to use the following setup:

- GND: green wire

- VCC: white wire

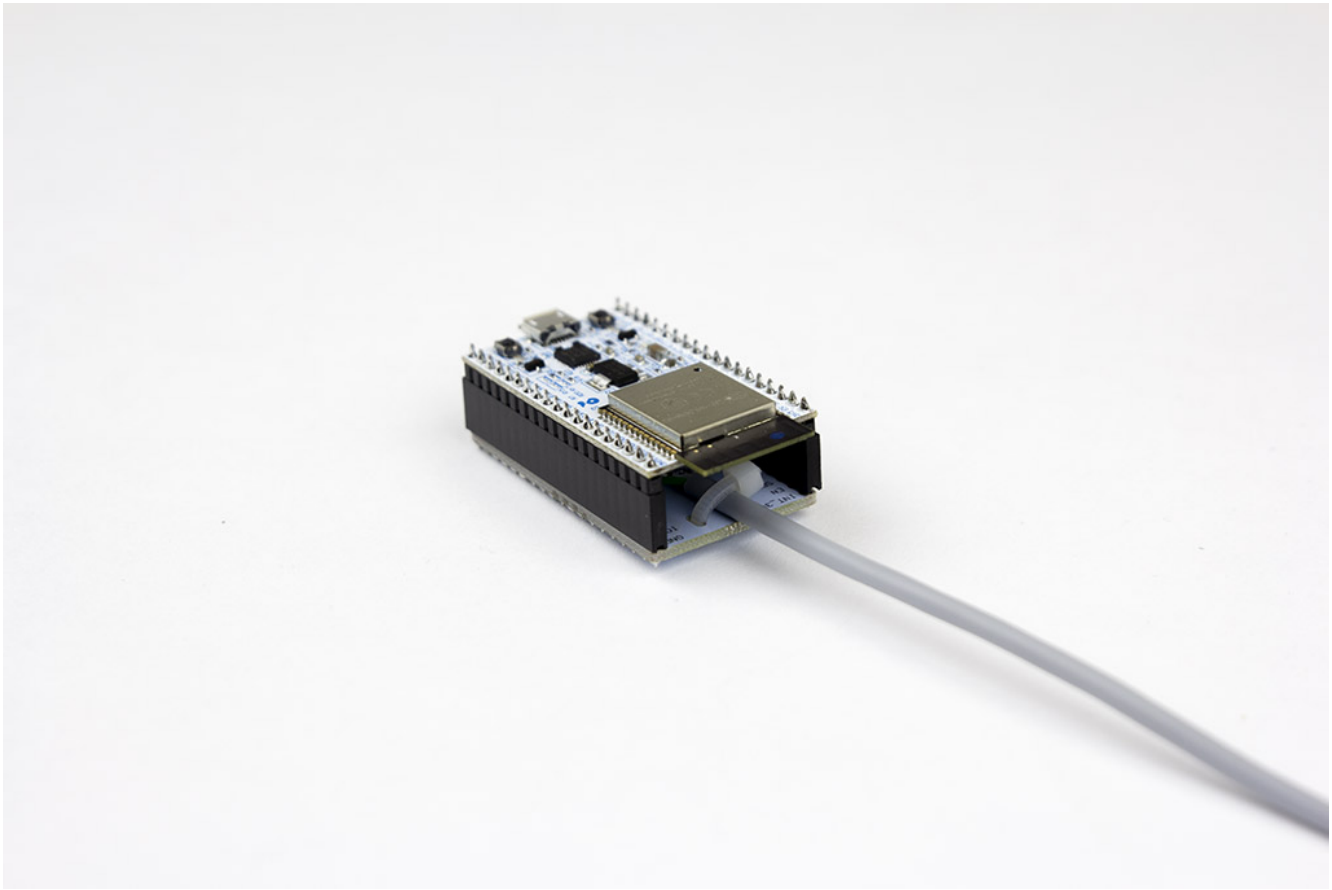
- D-IN: brown

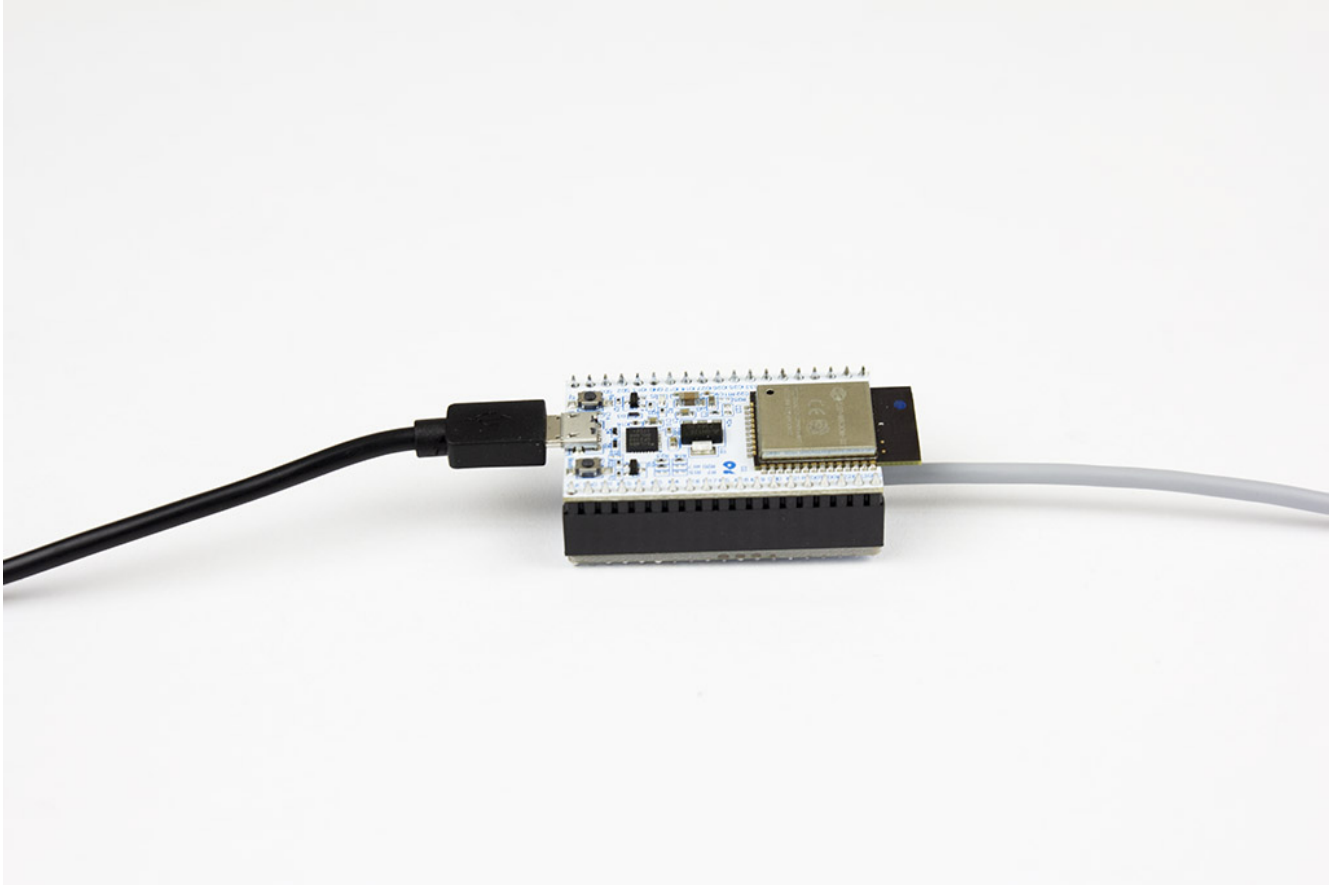


Step 9: now solder the other side of the data cable to the connection board PCB as shown in the picture. Be sure to connect GND with GND, VCC with VCC and D-IN with D-OUT! If you used the same setup as us, you can compare your connection with the picture below.

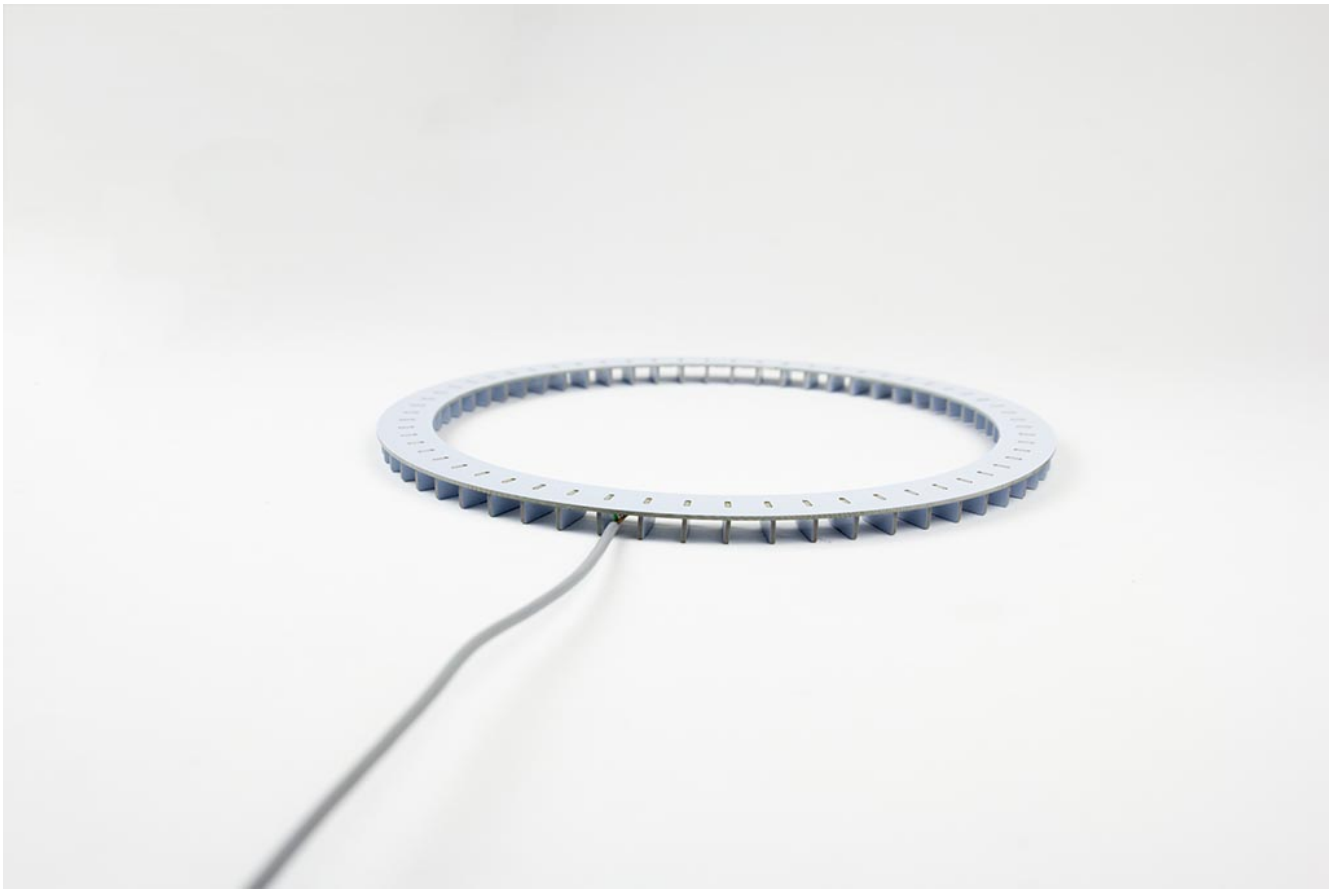
Fasten the cable to the connection board by using the zip tie.

Step 10: connect the connection board of the clock to the ESP32 board.





Head over to the user manual to setup your clock. We would advise you to mount the clock after you checked whether the clock is fully functional. For now, place on a table top.



Article Number: 1156
Posted: Mon, Jan 14, 2019 4:16 PM
Last Updated: Mon, Jan 28, 2019 8:26 AM

Online URL: https://manuals.whadda.com/article.php?id=1156