**CLOQ Kit – Assembly Instructions**

**http://cloq.us**

Thank you for choosing CLOQ Kit!

# Kit Parts and Required Tools

1) Familiarize yourself with the parts contained in CLOQ Kit:
    a. CLOQ Face
    b. CLOQ Back
    c. Colored LED strip
    d. Pre-assembled electronics enclosure
    e. 18650 Li-Ion battery holder
    f. Edge banding veneer (4 pcs)
    g. Screws (3 pcs)
    h. Rubber feet (3 pcs)
    i. Epoxy Resin (parts A and B)
    j. Mixing cup
    k. Glove
    l. Stirring stick
2) Tools and supplies needed:
    a. High quality painter's masking tape 1 1/2" width
    b. Sandpaper 180, 400 grit
    c. Household iron
    d. Phillips screwdriver
    e. White wood glue

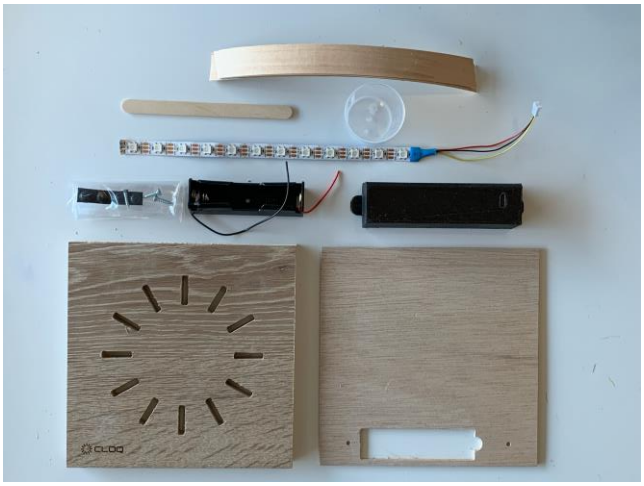

Figure 1. CLOQ Kit Parts

# Step 1 – Assemble the CLOQ Face

1) Place CLOQ face facing up on a clean flat surface. Cover the 12 slots with high quality painter's masking tape as shown in Figure 2. This tape is required to contain the resin that will be applied in Step 3. Tape should cover each slot completely. Using your finger, press the tape firmly onto the edges of each slot. If the tape is not pressed firmly onto the face, resin may leak past the tape onto the CLOQ face.

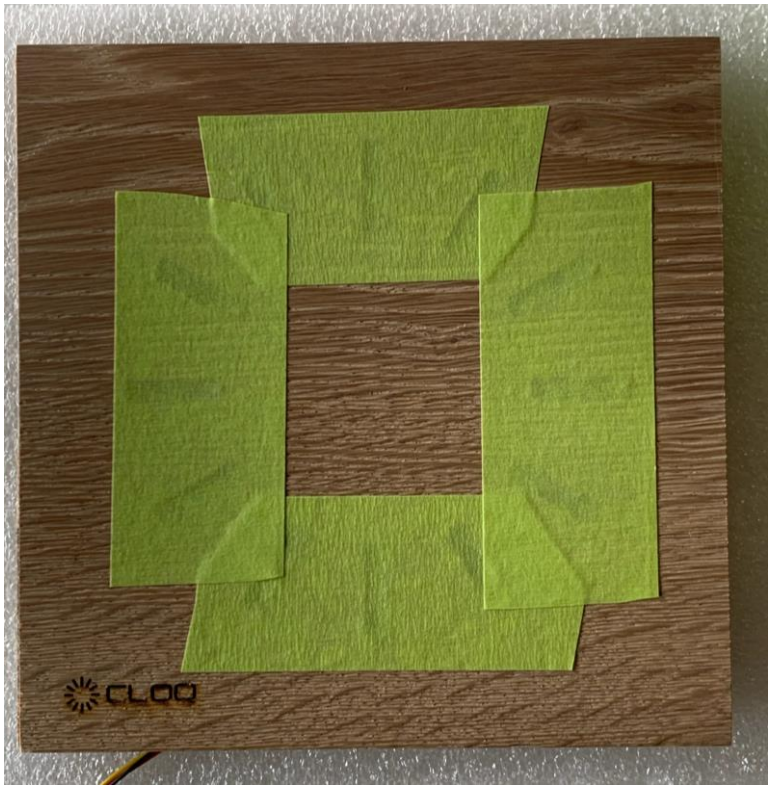


Figure 2. Masked CLOQ front face

**Tips and tricks:** Make sure that the tape is applied with no tape seams cutting across a slot. Tape seams will result in an unsightly line in the resin after it is cured. Tape should extend beyond the edges of the slots to contain the resin. Press firmly along the edges of each slot to assure there are no gaps where resin could leak.

2) Flip the CLOQ face over to expose the back side. Carefully insert the LED strip into the machined circle with one LED pressed into the end of each slot. Make sure the LED strip is oriented as shown in Figure 3, with the strip inserted counterclockwise and the wire connector exiting through the ‘j’-shaped groove.

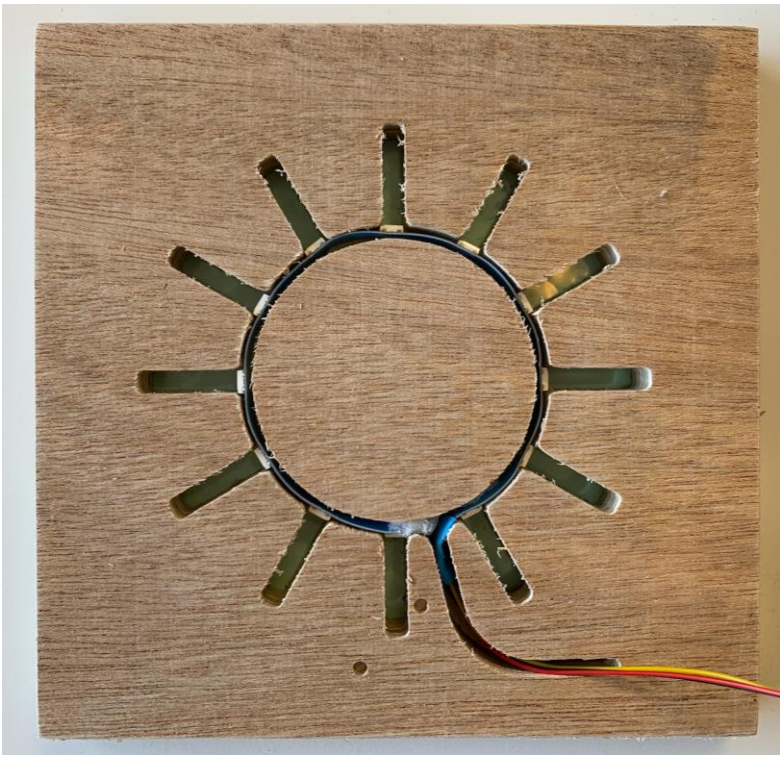

Figure 3. Insert LED strip from the back side.

**Tips and tricks:** You can use some small pieces of foam or other soft material pressed behind the first and last LEDs to hold the strip in place. Make sure that the LED strip is inserted all the way into the slot with no edges protruding up above the wood face.

3) With gloved hands, in a well-ventilated area, pour equal amounts of resin part A and B into the mixing cup. Carefully stir the resin using the provided stirring stick for at least 5 minutes. Pour the mixed resin into each LED slot as shown in Figure 4. Be careful not to spill resin onto the back of the CLOQ or your workspace. Let the resin cure undisturbed for at least 24 hours. After 24 hours you may remove the masking tape and inspect the CLOQ face. Using your fingernail, carefully scrape off any resin that may have leaked onto the CLOQ face.

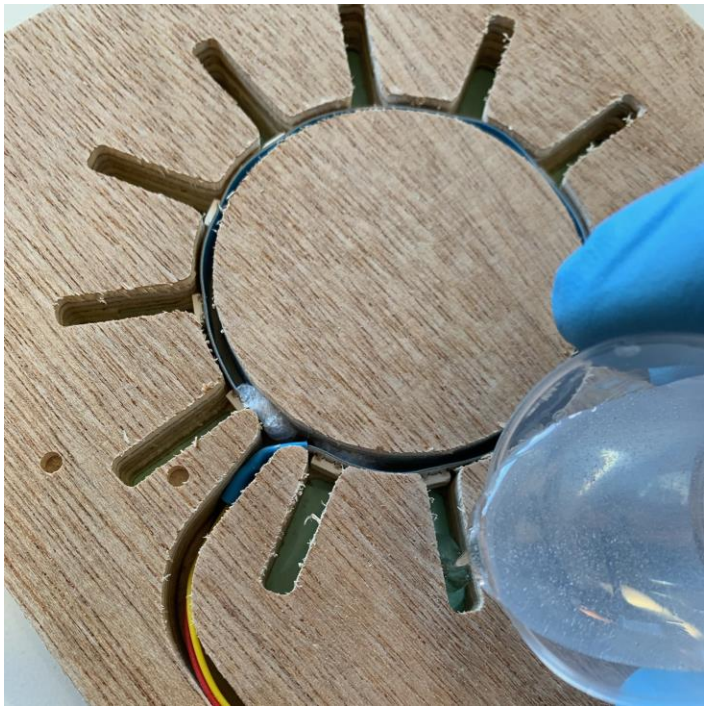

Figure 4. Pour resin into slots

**Tips and tricks:** It is useful to let the resin sit for about a half hour to 45 minutes after mixing before pouring into the CLOQ slots. This allows the resin to thicken slightly, making it less likely to leak past the masking tape. After pouring, while the resin is curing, you can place CLOQ face down on a foam sheet with a weight on top. This will help keep the masking tape in place. If any resin did leak onto the CLOQ face, after it has cured for 24 hours it can be lightly sanded with a fine grit sandpaper. A clear acrylic coating can be applied to the CLOQ face to restore a consistent finish.

4) After the resin has cured for at least 24 hours, attach the CLOQ back using white wood glue. Be careful to thread the wires through the opening and properly align the edges (see Figure 5). The half circle cutout should align with the 'j' groove in the back of the CLOQ face. Place a weight on the back while the glue is drying. Most white glues cure in about one hour or less – read the instructions on the bottle.

Figure 5. Align and attach CLOQ back. Weight is placed while glue is drying.

5) After the glue has cured, use 180 grit sandpaper to smooth the four sides of the CLOQ body. Sand away any overhang parts of the back and make sure the edges are even and flat. Flat edges are important for the next step, so don't rush this step.

**Tips and tricks:** Take extra care to align the edges properly. This will reduce the amount of sanding needed to produce flat edges.

6) Use a household iron on high heat to iron the edge banding onto the CLOQ sides. Make sure the edge banding is aligned with the CLOQ front face, but allow the edge banding to overhang on the back and ends. The overhangs can be cut off with a sharp knife (e.g., a box cutter or x-acto) after the banding has cooled. Do this one side at a time. Rough edges can be sanded smooth, taking care not to mar the CLOQ face.

Figure 6. Applying and trimming edge banding

Figure 7. Finished CLOQ body

**Tips and tricks:** Allow the edge banding to cool for several mintues before cutting. Always use a new, sharp blade to cut edge banding. It is often best to make a single cut from the glue side of the edge banding and then snap the excess off.

## Step 2 – Install CLOQ Electronics

The CLOQ Kit includes a pre-soldered electrical circuit. The wiring diagram is shown in Figure 8. The components are pre-installed in the electronics enclosure and there is no need to disassemble or alter this circuit.

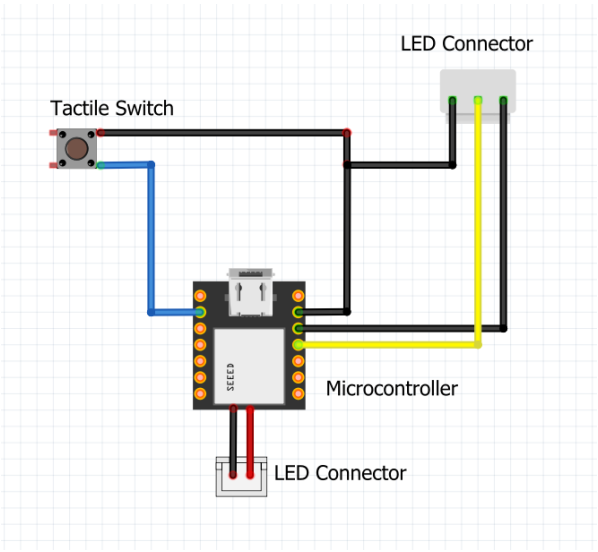


Figure 8. Electrical Wiring Diagram

1) Using a single screw, install the 18650 Li-Ion battery holder on the CLOQ back as shown in Figure 9. Negative terminal (with the spring) should be oriented to the left.

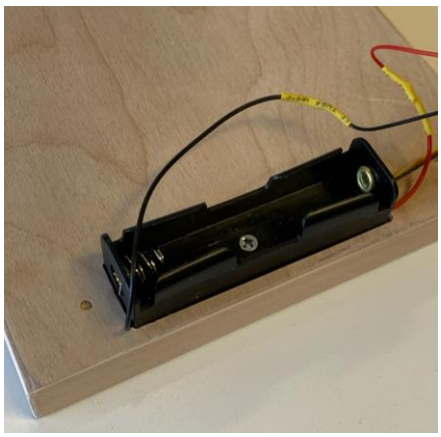

Figure 9. Install the 18650 battery holder

2) Connect the JST connectors from the pre-assembled electronics enclosure to the LED strip and 18650 battery holder, making sure the wire colors match on either side of the connector. The LED connector has three wires and the battery connector has two wires. Press the connector ends together until they are properly seated (they should make a soft ‘click’ sound).

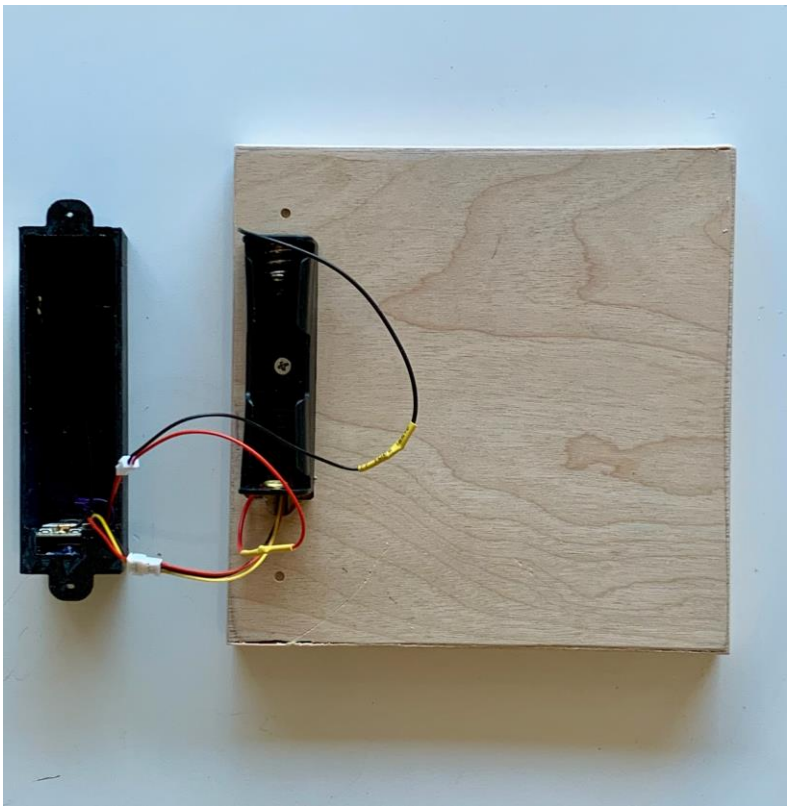

Figure 10. Connect the LED and battery cables

**Tips and tricks:** Make sure the connectors are oriented correctly before pressing together. Wire colors should match on either side of the connector.

3) Tuck any excess wire inside the enclosure and using two screws, attach the pre-assembled electronics enclosure to the CLOQ body making sure the USB-C connector is oriented as shown in Figure 11.

4) Peel and stick three adhesive rubber feet onto the CLOQ bottom as shown in Figure 11.

Figure 11. Enclosure attached to back of CLOQ and rubber feet installed

5) Optional: You can install a rechargeable 18650 Li-Ion battery (not included) in the battery holder if you want to run CLOQ using battery power. It is recommended to use a protected battery to avoid possible overcharging, undercharging and short circuits. The battery will charge when CLOQ is plugged in to USB power. CLOQ will run longer off battery power with a higher capacity battery.

**Congratulations! Your CLOQ is now complete. Follow the instructions on the CLOQ User Manual at http://cloq.us/Home/Support to connect CLOQ to WiFi and sync CLOQ time with an Internet-based time server.**