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About Workshop

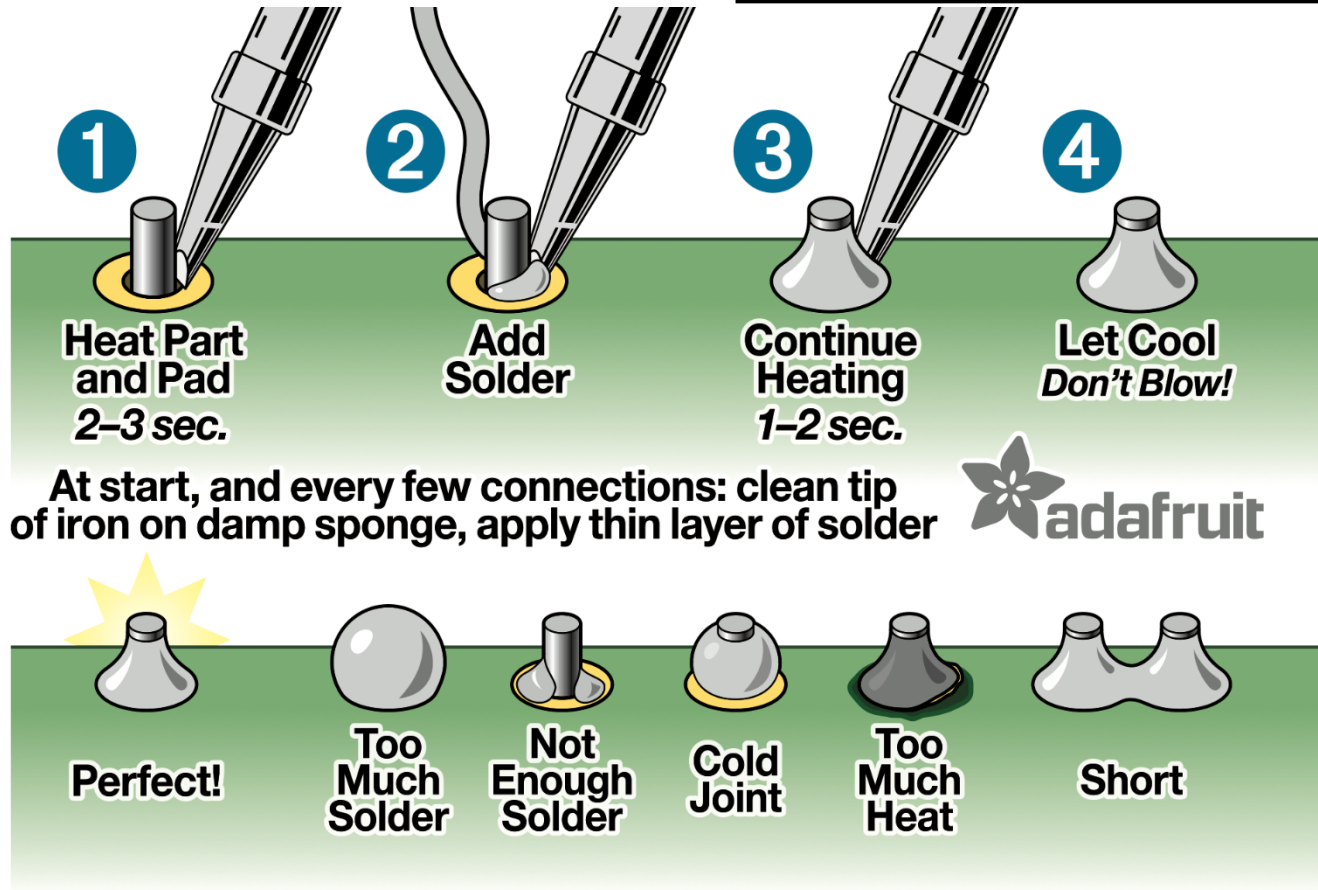
- Build a pocket-size game. Small, fits in to your pocket.
- Unique finished product, others can't buy it on the store
- DIY (Do It Yourself), made by you
- Fun



ARDUBUINO

pocket size DIY game console

SOLDERING





Safety Instruction IMPORTANT

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- Adjust your seating, be comfortable
- Connect the solder to the main. Indicator led will turn on. The solder is heating up and reach its max temperature within 2 minutes
- Always put solder in the specified position when not in use
- Relax but stay focus, don't play around with solder or joking as you may inadvertently hurt yourself or others



Safety Instruction IMPORTANT

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- No need to race to be the 1st, be patient and follow instruction slide by slide.
- Hold the solder cold area firmly, always put the solder tip downward
- Fume will be released when solder tin melts. Blow it away gently
- Do not inhale the fume intentionally as you may get dizzy



Safety Instruction IMPORTANT

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- Inform the instructor when you feel dizzy. Stop what you are doing and take fresh air before continuing
- If your finger or any body part is in contact with the solder hot part, don't panic, don't throw the solder. Take a deep breath and put it on the table gently and inform the instructor for first aid.
- Use practice session to get familiar with the soldering



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BUTTON

- Directional pad
- Action pad
- Silicon rubber
- Silent





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BUZZER

- Tiny speaker
- Emit retro tone
- Make the game alive



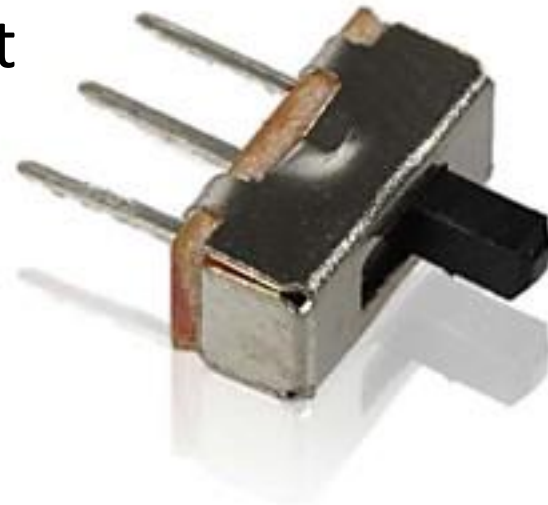


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Switch

- Open/close electricity current
- Convenient ON/OFF switch





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Charging Module TP4056

- Charge Lithium Battery
- Battery input
- Output 5 Volt / 1 Ampere
- Charging/Full indicator
- Protection circuit





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Arduino Pro Micro

- Microcontroller ATmega 32u4
- Frequency 16 MHz
- 32Kb RAM
- Integrated USB Programming
- Computer that runs the game





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Display OLED 0.96 Inch SPI

- OLED monochrome graphic display
- High contrast
- 128 x 64 pixel
- High speed SPI 40 MHz
- Smooth animation



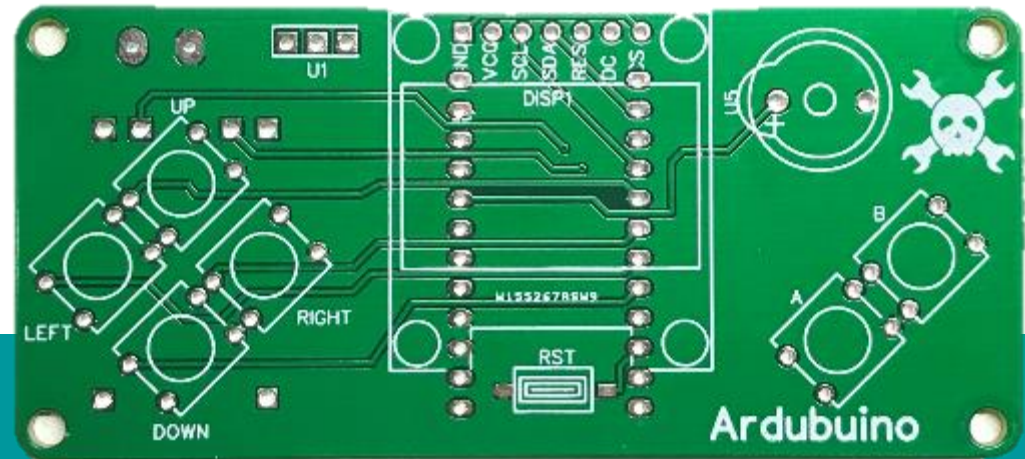


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Printed Circuit Board (PCB)

- The place for all components
- Copper trace to connect all components
- 2.4 mm thick, strong material, great finish

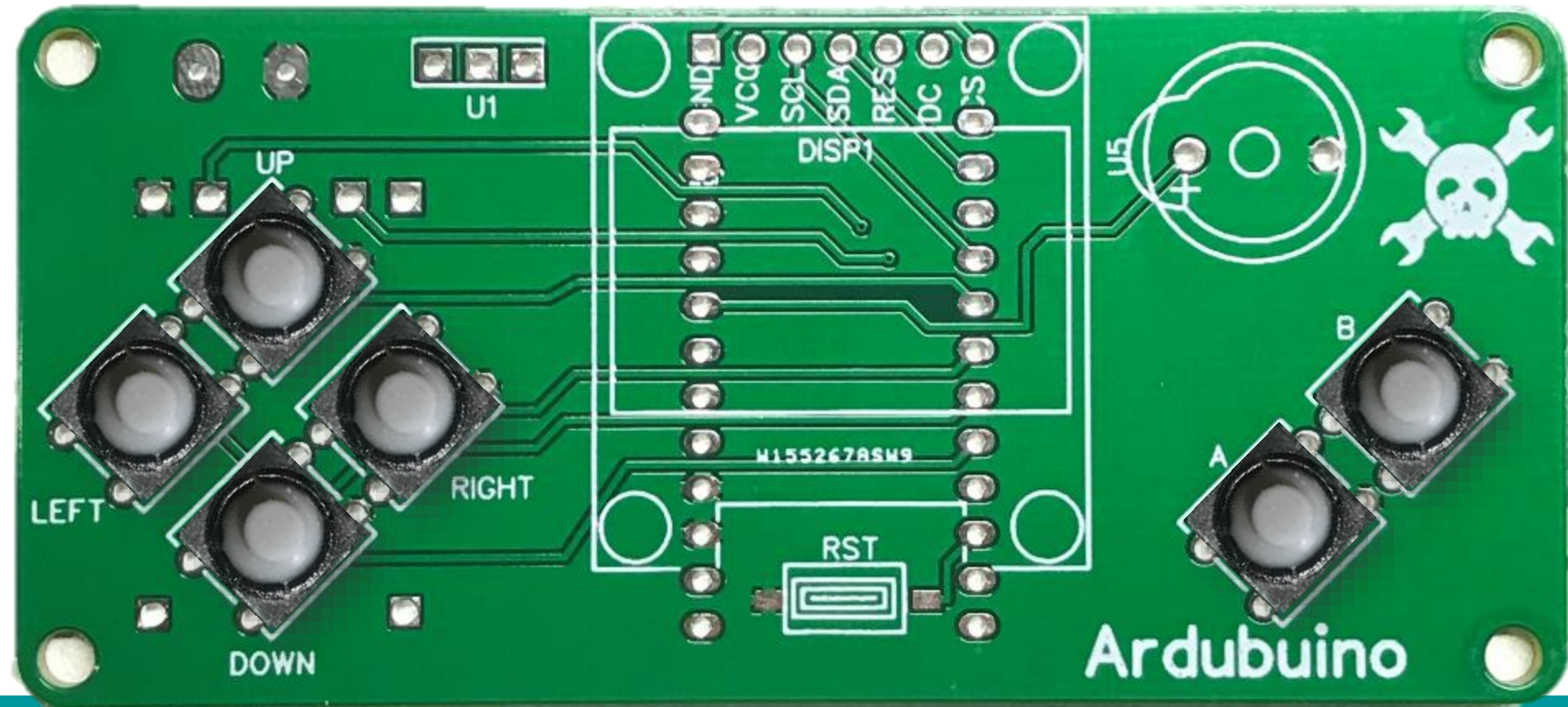




STEP 1. BUTTON (1/2)

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TILTED INSERTION, ONE SIDE AT A TIME

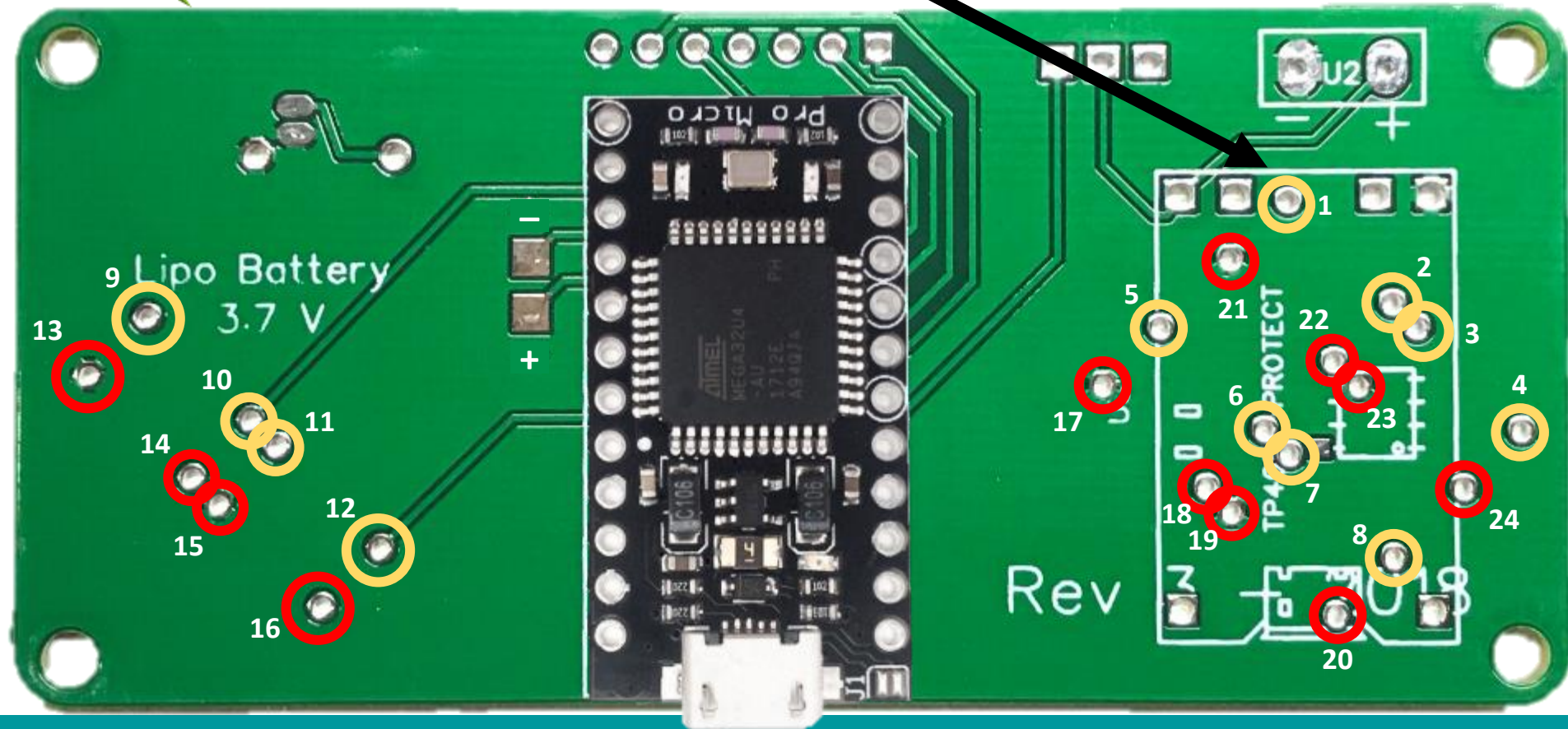


STEP 1. PUSH BUTTON (1/2)

Start from here

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FOLLOW THE SOLDERING SEQUENCE



Yellow First



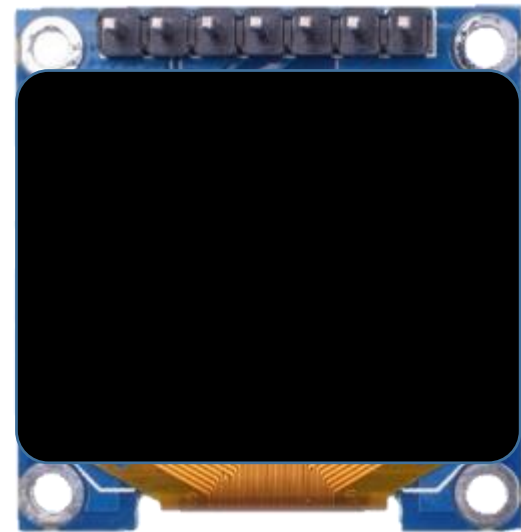
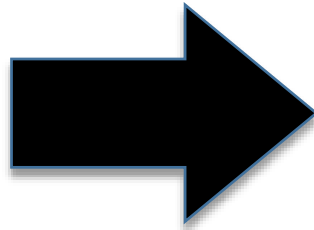
Red Next



STEP 2. OLED 0.96 INCH (1/3)

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APPLY NON-CONDUCTIVE TAPE TO PREVENT SHORT



STEP 2. OLED 0.96 INCH (2/3)

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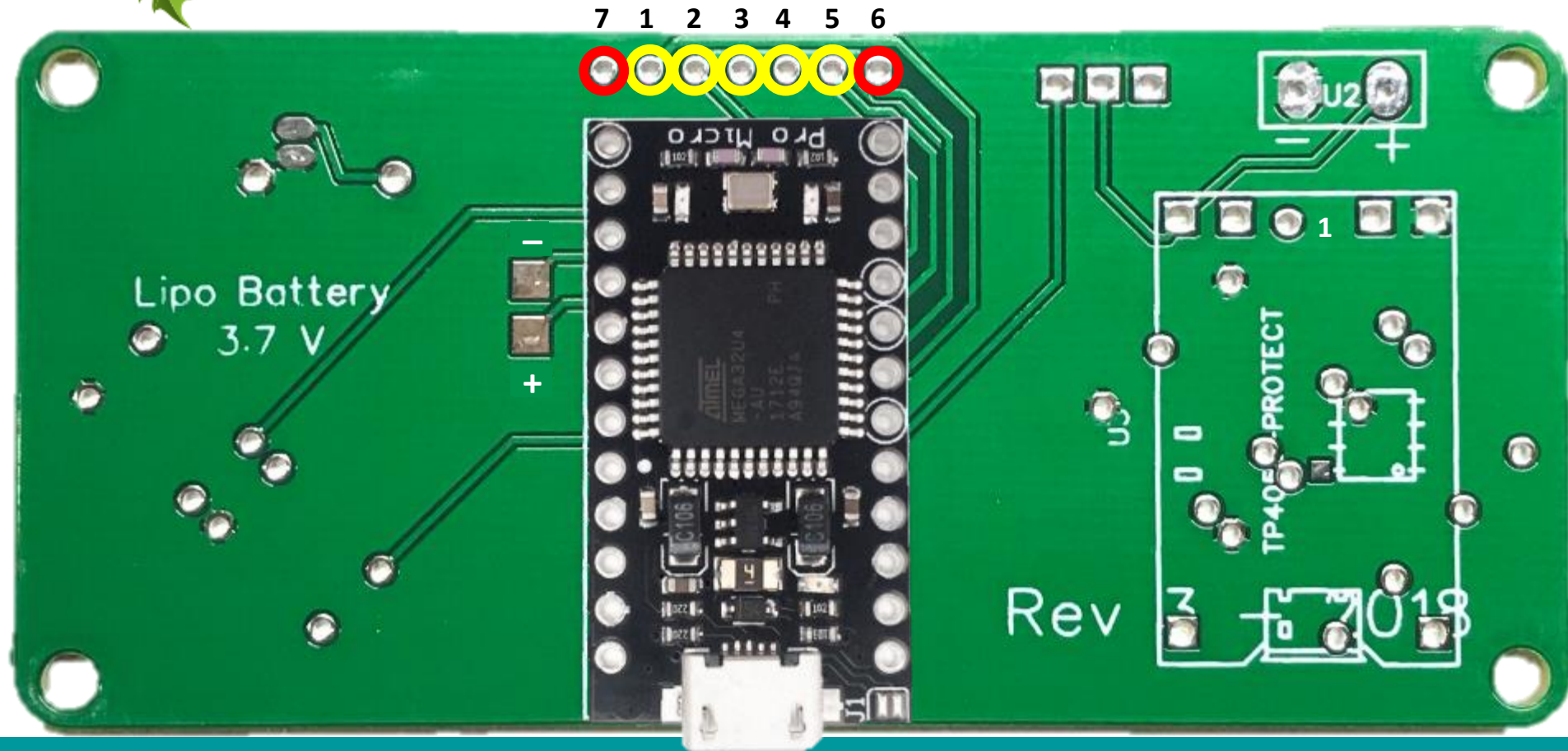
SET THE DISPLAY ON THE TOP SIDE



STEP 2. OLED 0.96 INCH (3/3)

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FOLLOW THE SOLDERING SEQUENCE



Yellow First



Red Next

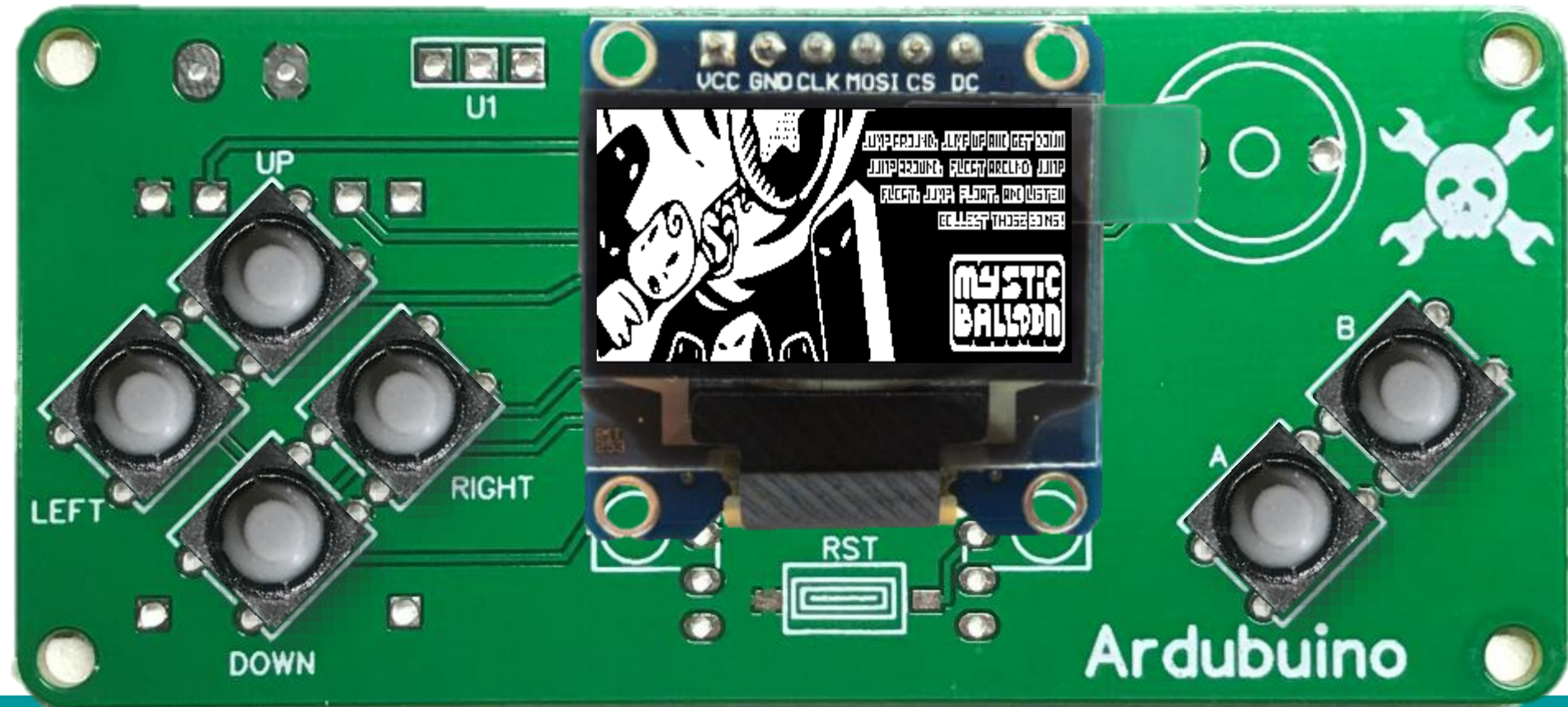


TEST POINT #1

PLUG MICRO USB CABLE TO POWER UP

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☐ DISPLAY

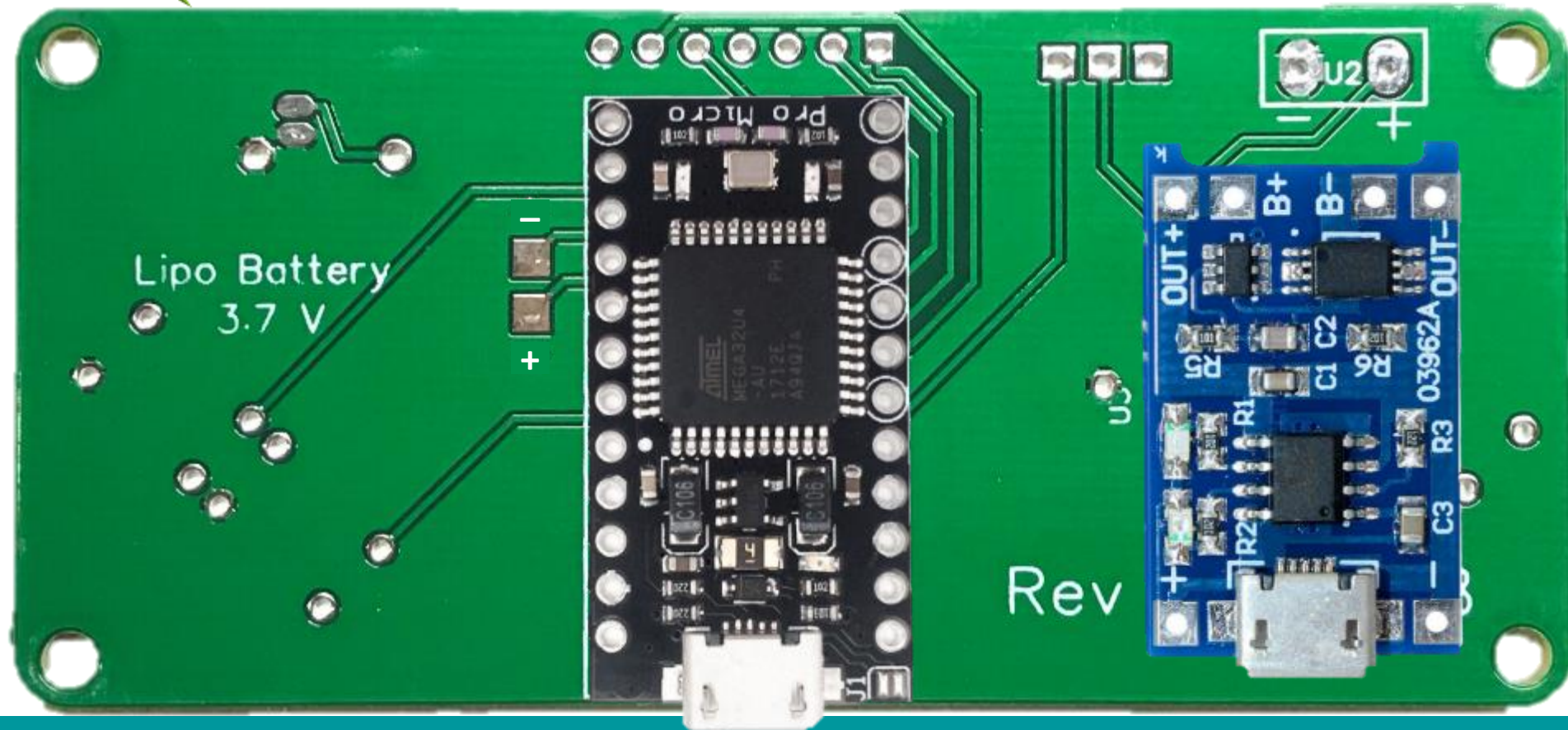
☐ CONTROLS



STEP 3. CHARGING MODULE (1/2)

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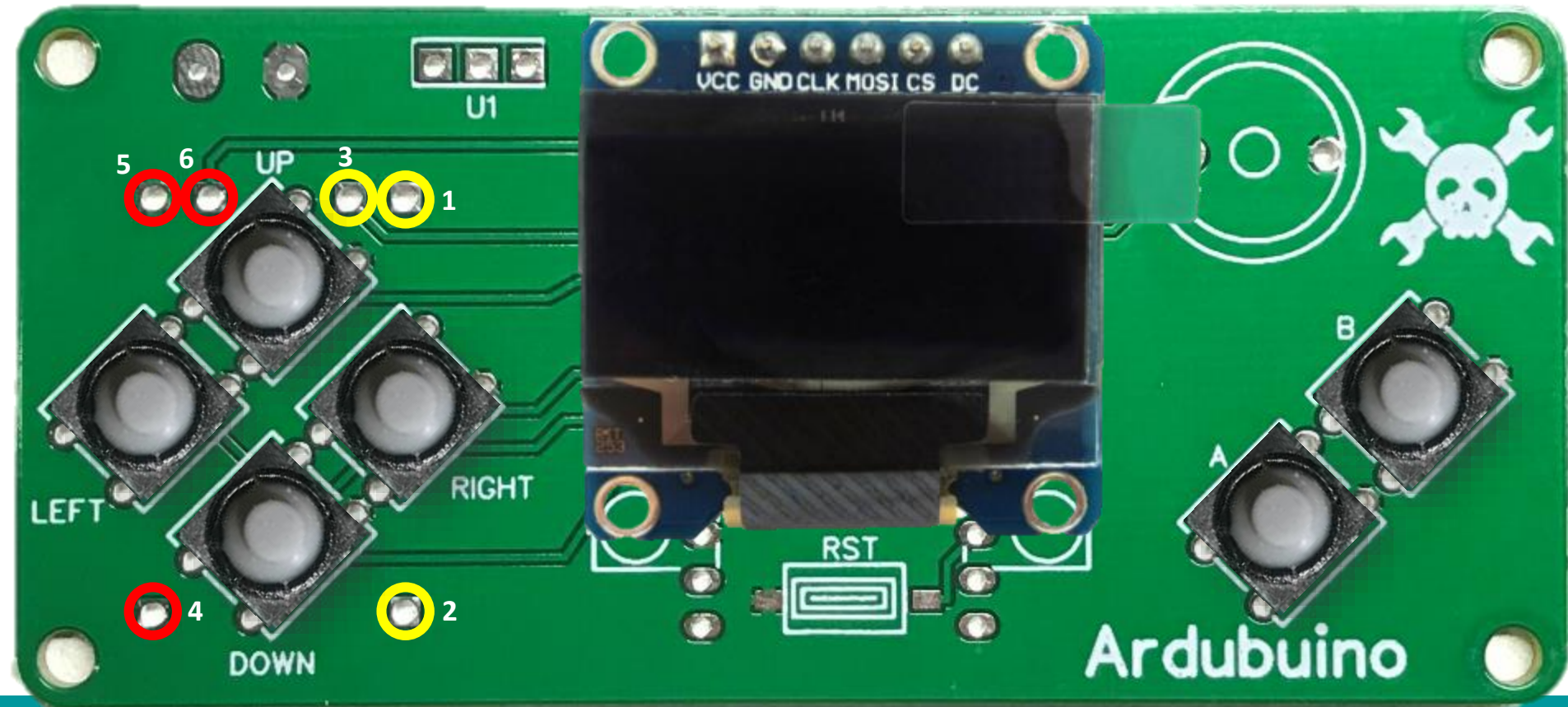
SET THE MODULE ON THE BOTTOM SIDE



STEP 3. CHARGING MODULE (2/2)

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FOLLOW THE SOLDERING SEQUENCE

Yellow First

Red Next



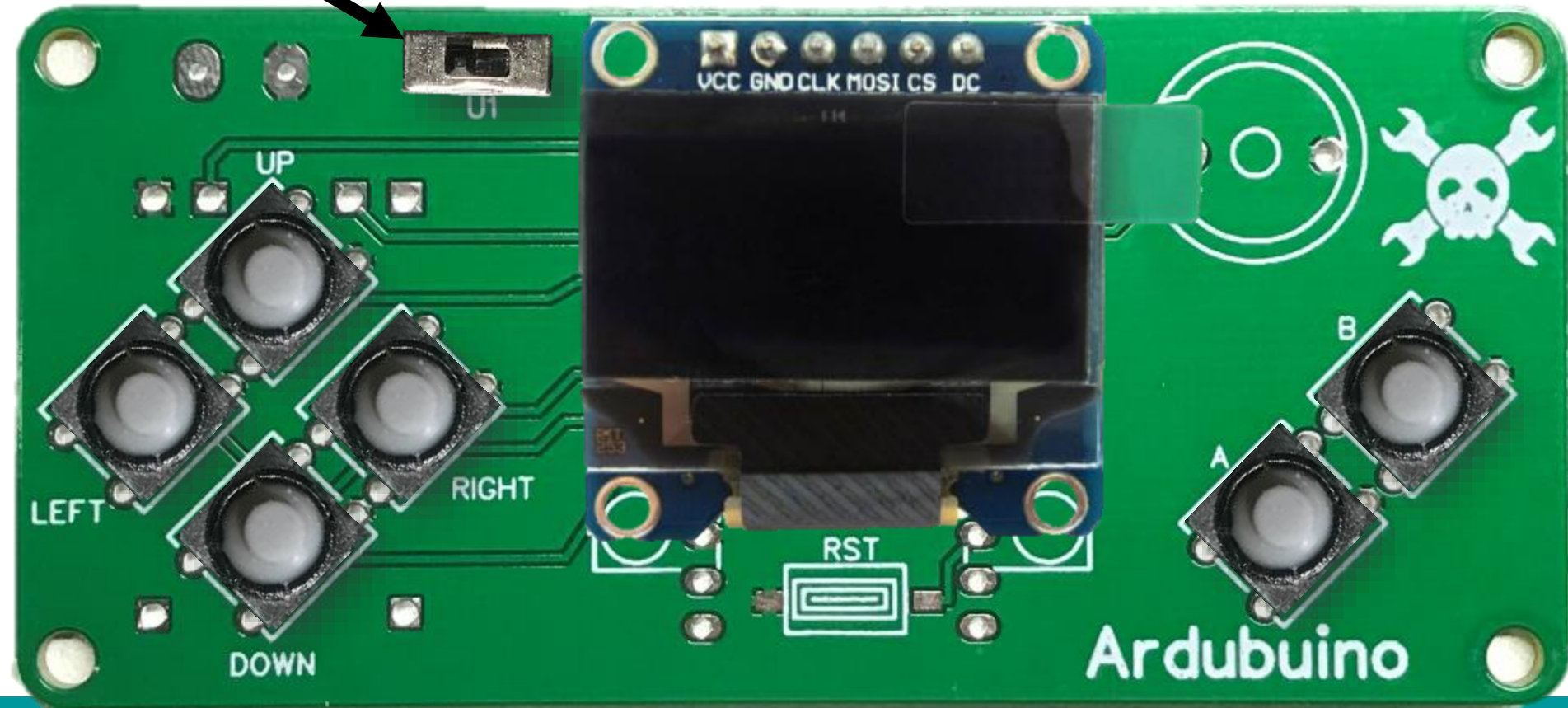
STEP 4. POWER SWITCH (1/2)

here



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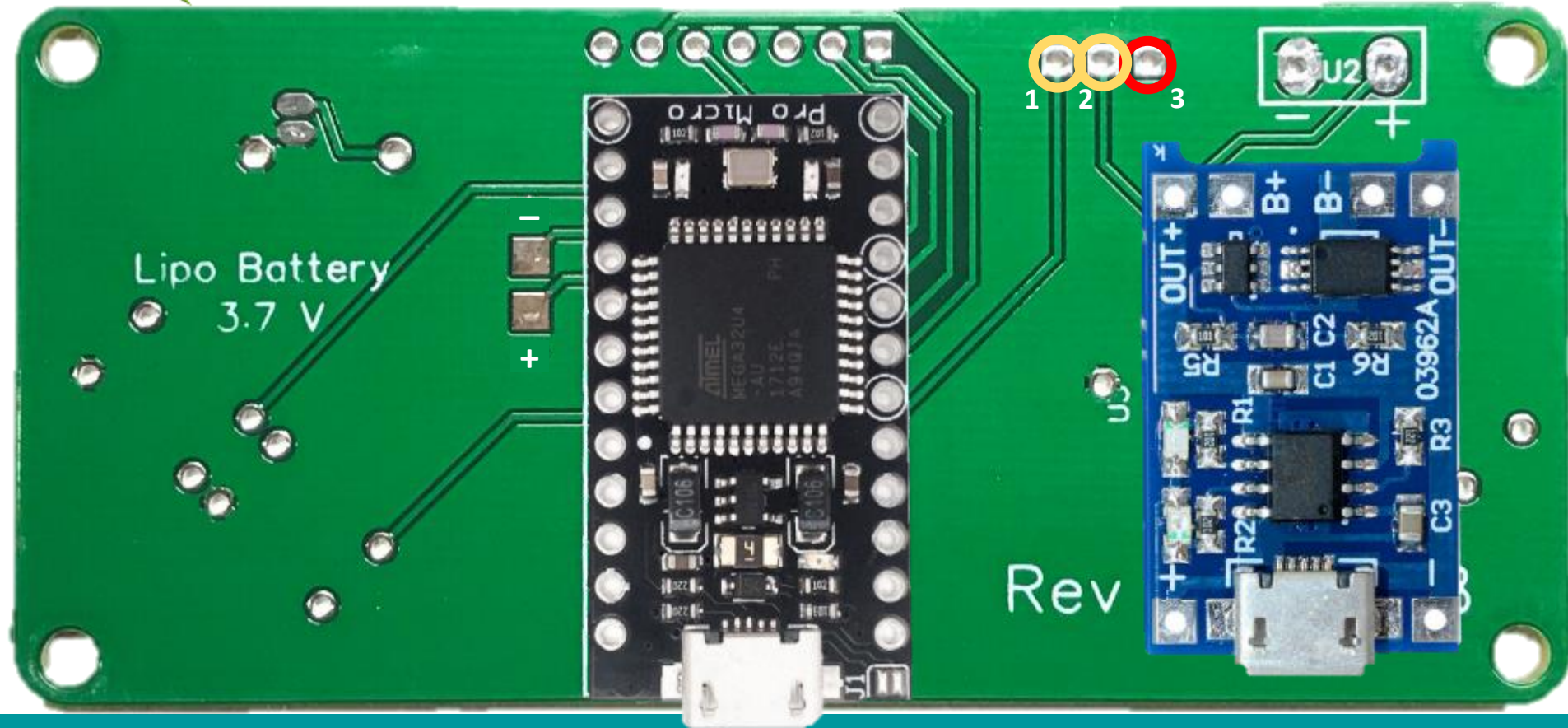
SET THE MODULE ON THE TOP SIDE



STEP 4. POWER SWITCH (2/2)

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FOLLOW THE SOLDERING SEQUENCE



Yellow First



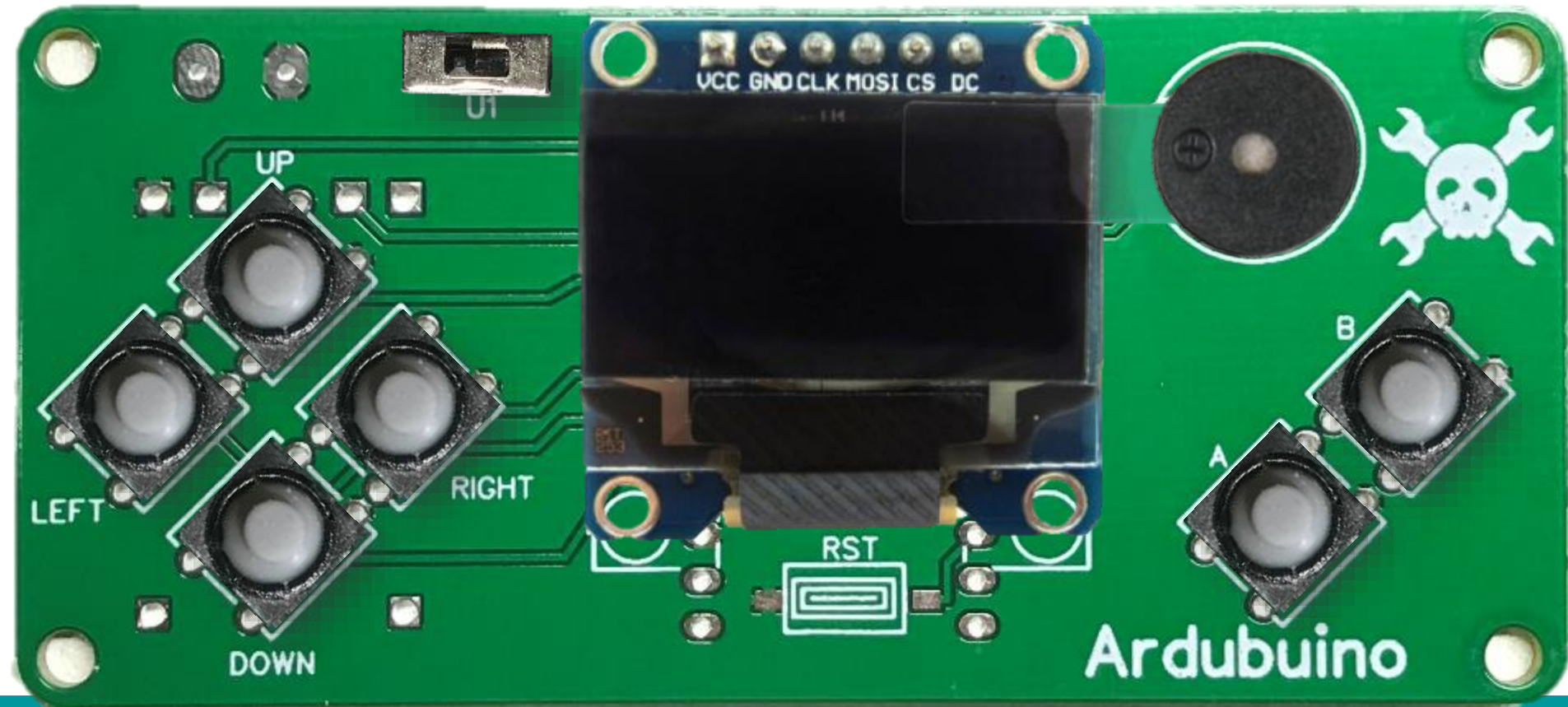
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STEP 5. BUZZER (1/2)

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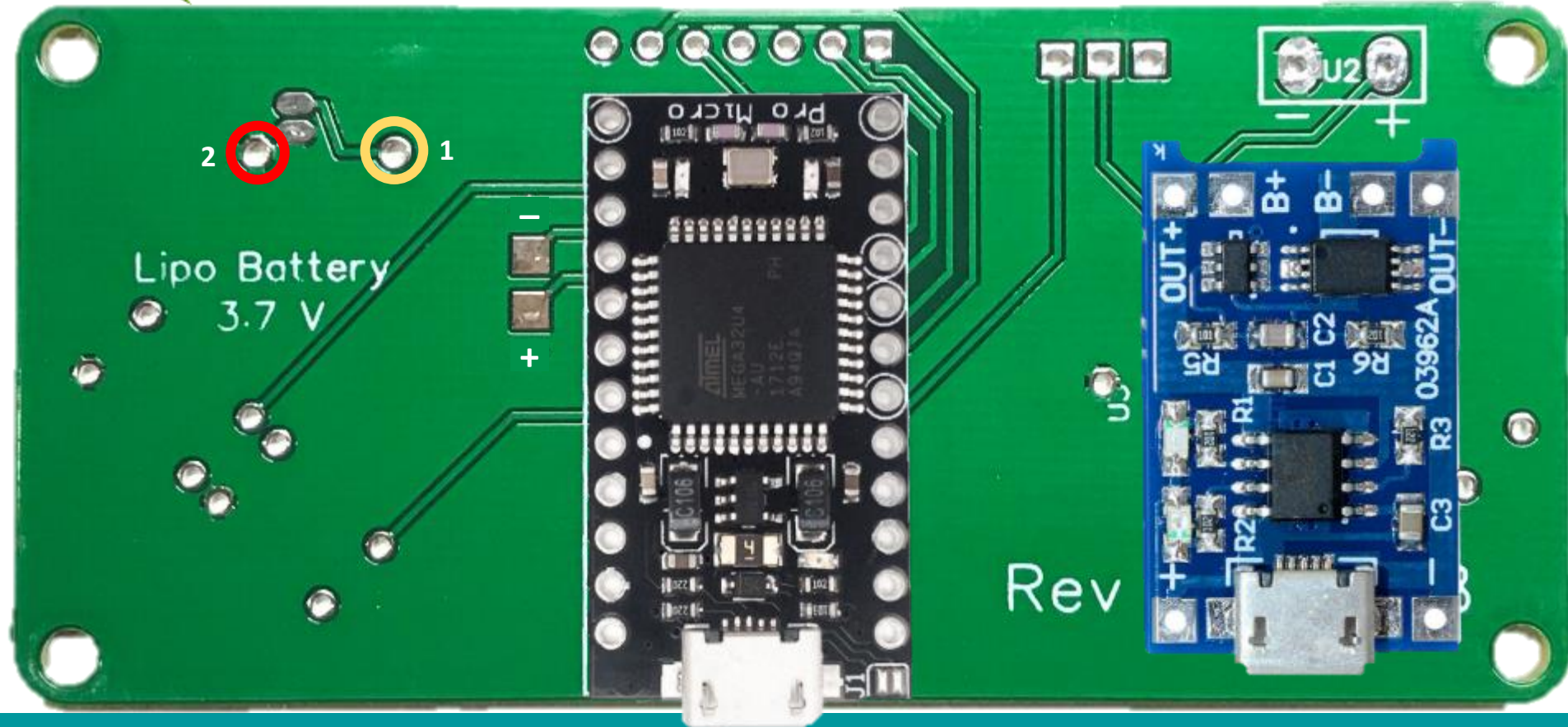
SET THE MODULE ON THE TOP SIDE



STEP 5. BUZZER (2/2)

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FOLLOW THE SOLDERING SEQUENCE



Yellow First



Red Next

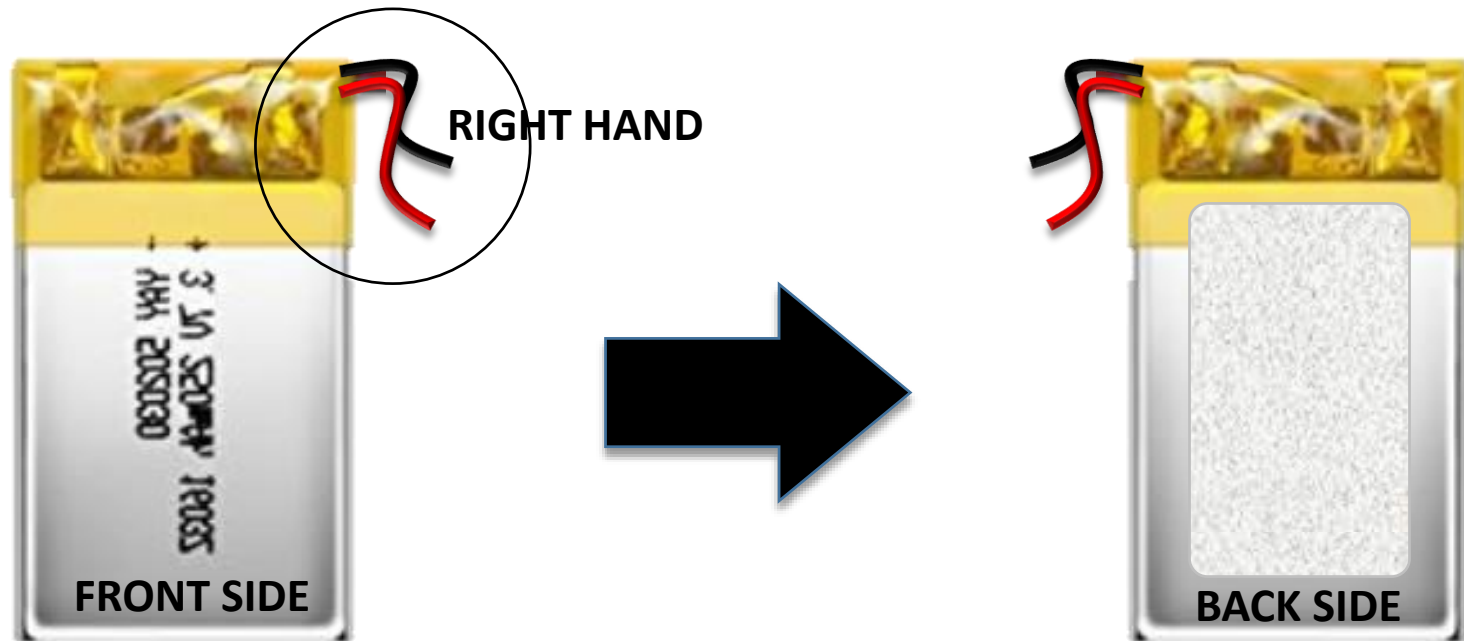


STEP 6. BATTERY (1/2)

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HOLD BATTERY WITH CABLE TOWARDS RIGHT HAND
APPLY DOUBLE-TAPE ON THE BACK SIDE, DON'T PEEL IT FOR NOW



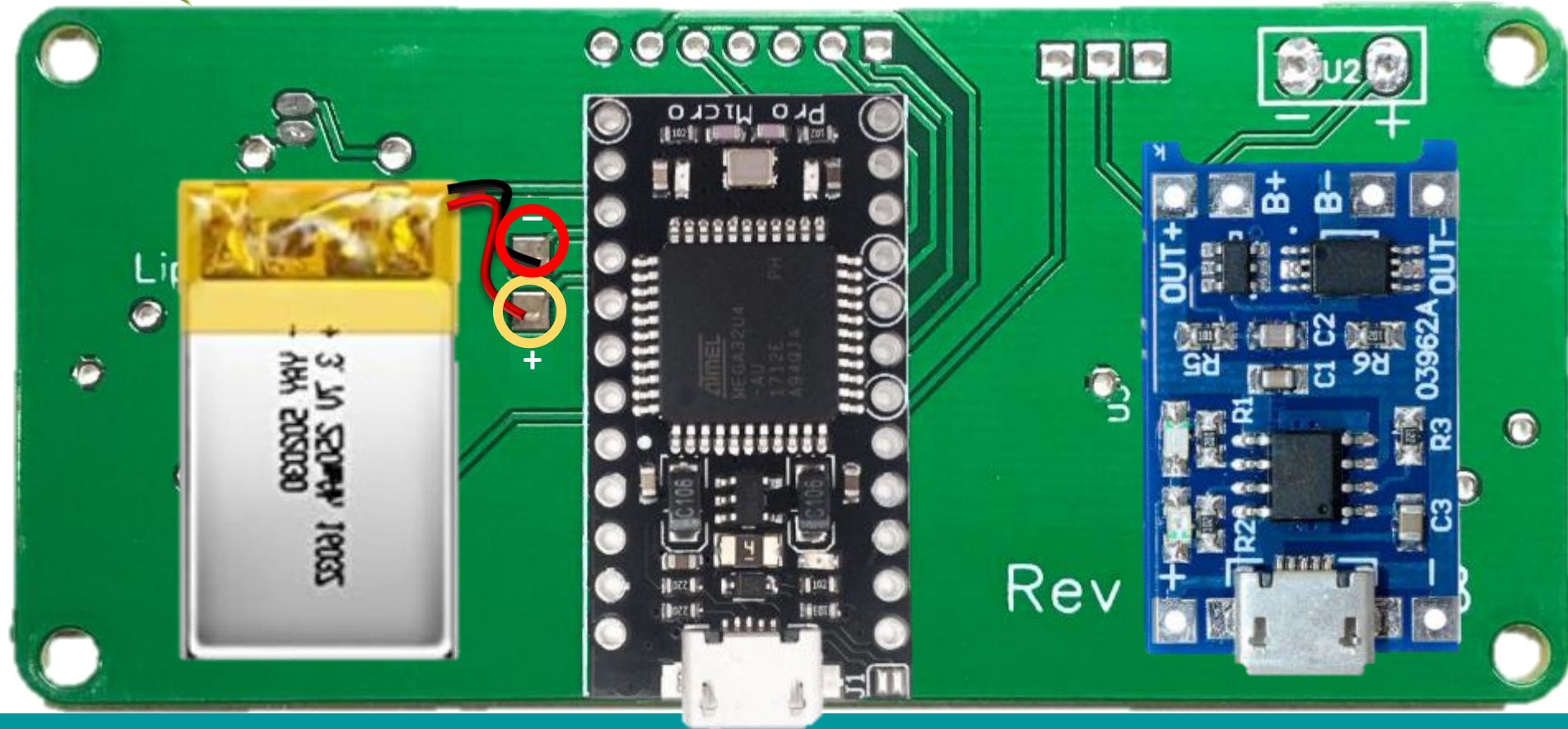
KEEP RED AND BLACK CABLE SEPARATED



STEP 6. BATTERY (2/2)

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FOLLOW THE SOLDERING SEQUENCE, THEN PEEL THE TAPE



Yellow First



Red Next

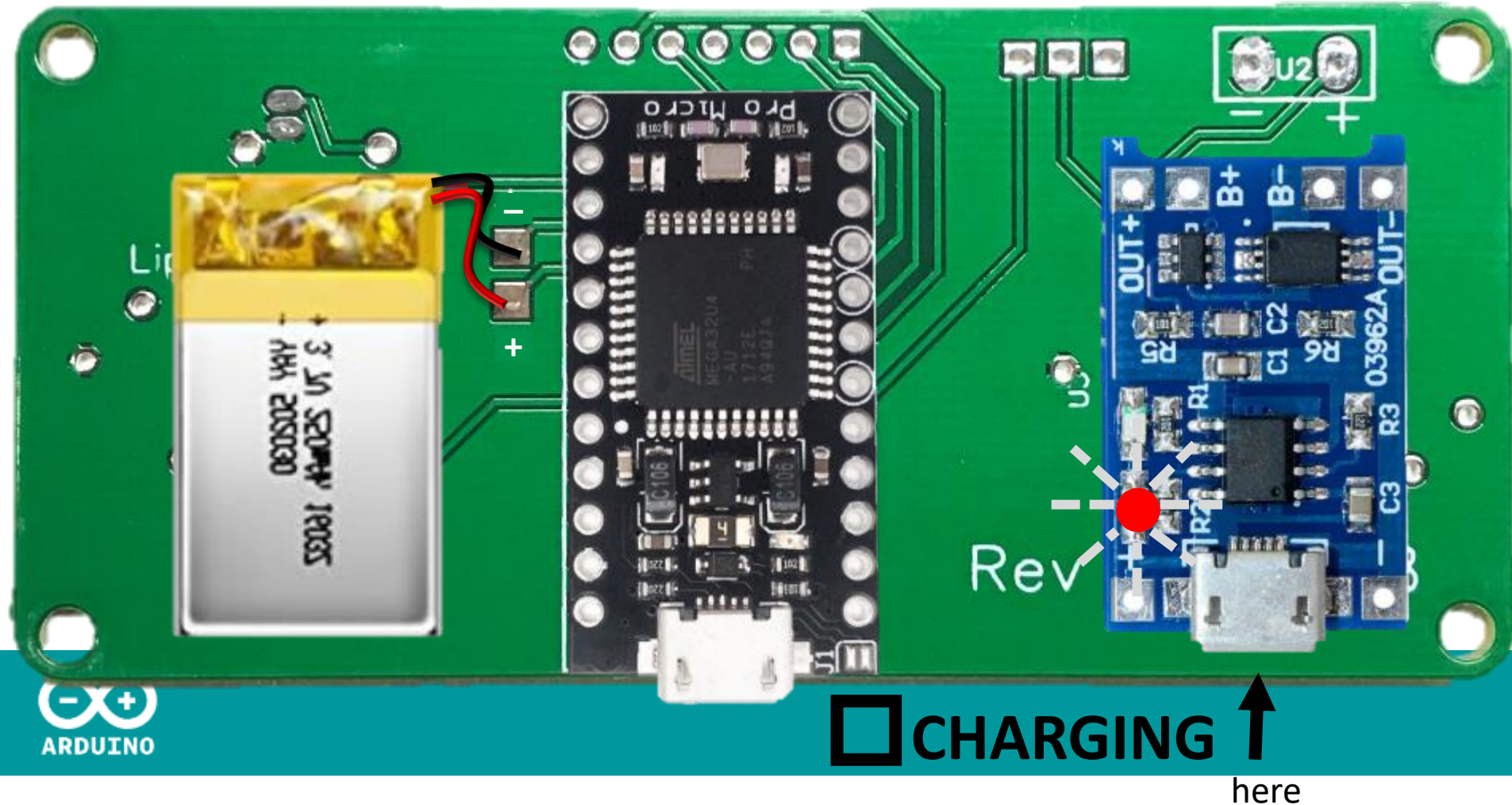


TEST POINT #2

PLUG MICRO USB CABLE
TO CHARGING MODULE

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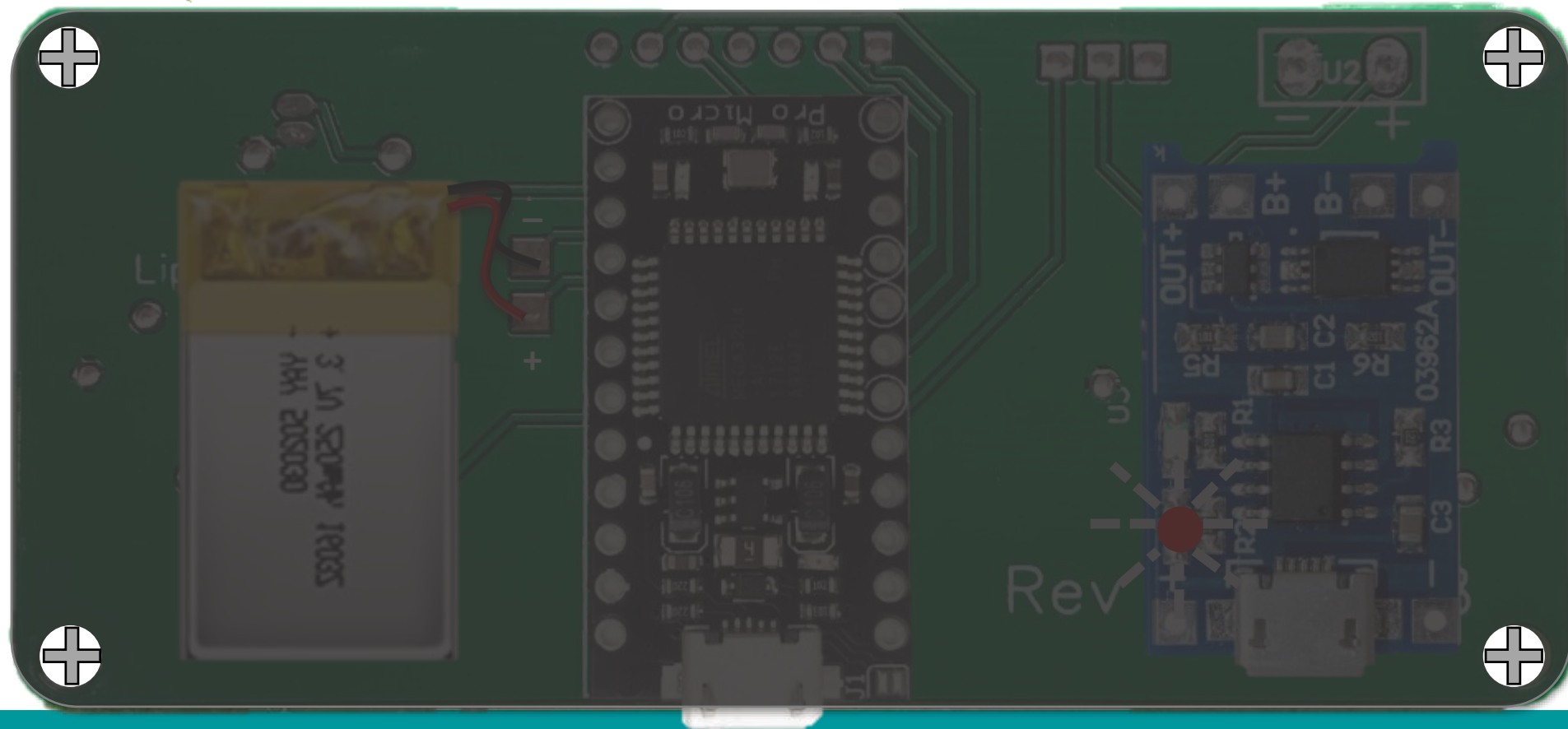




LAST STEP SET THE BACK COVER

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USE THE SCREW TO TIGHTEN



Game Upload Android Smartphone

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U Arby Utility

Upload & Backup Flash
Upload & Backup EEPROM

- OTG Cable
- Micro USB Cable



Game Repository