Note on the ESP32 D1 Mini boards:

- There are many clones out there, which can have the following drawbacks:
  - The voltage regulator (the small 5-pin package) can be weak, resulting in poor power delivery.
  - If the voltage is above 5.25V, the system may not work (not regulated).
- Boards with this regulator are working with a 5V supply voltage because:
  - Some boards come with 15V protection diodes on the top-left side of the microcontroller, just with a 5V regulator connected, which can damage your battery.
  - The PCB thickness is not always the same, so 2 different battery voltages are required.

- Only use the following regulator:
  - 15V regulator for 5V output: SMPS1, SMPS2, PAM8403

Optional filter capacitors:

- These capacitors are optional.
- The controller will work without them, but may be less stable.

Optional battery warning:

- Connects only required if you want to measure the battery voltage using "Battery Voltage/Protection".

- Always use series resistors, according to:

- The following numbers are suggested:
  - 10KΩ: High Light
  - 1KΩ: Medium Light
  - 100Ω: Low Light
  - 10KΩ: High Indicator
  - 1KΩ: Medium Indicator
  - 100Ω: Low Indicator

- Several notes:
  - The controller does not have a reverse polarity protection.
  - Disconnect the battery before doing anything.
  - Double check the wiring before connecting the battery.
  - The input supply range is 5V to 5V (5V is recommended). A PAM8403 amplifier uses 5V only.