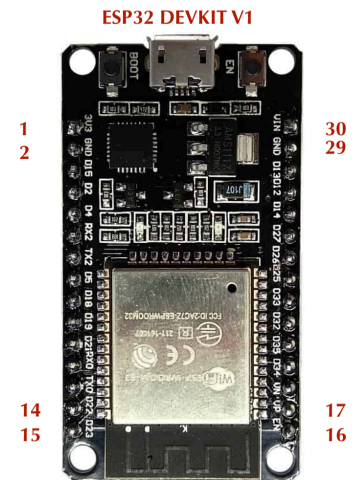The parts listed below are used in the RC Controller. The parts pin numbering shown here is the one used in the official schematic.
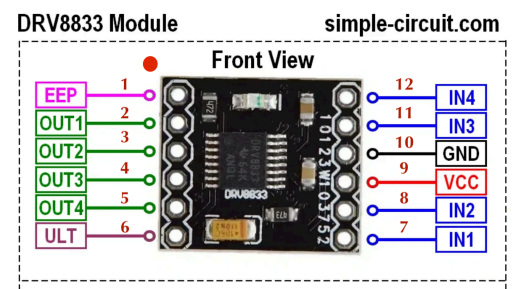
ESP32

The ESP32 module used is the Version 1 of the Espressif DEVKIT. The module must be identical to the one shown here, as different versions have different capabilities.
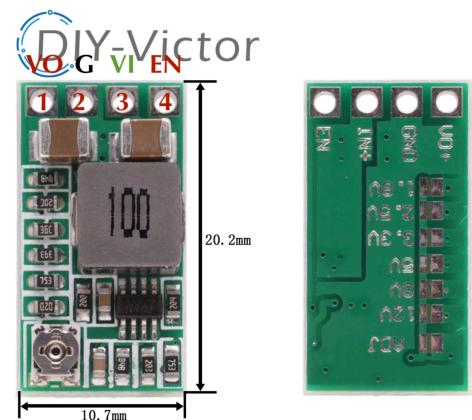
This module has BlueTooth and Wifi.

DRV8833

The DRV8833 module provides 2 motor control outputs and can be used to power DC motors. It can also be used to power LEDs. Since you can reverse the polarity of the output, you can have two different sets of LEDs attached. One polarity will light one string and reversing will light the other. You can't light both at the same time. These modules will have either a red or green LED when working. They can be powered directly from a 2S battery. (VCC = 8.4v, but Inputs can be powered by ESP32 GPIO pins)

Step Down Regulator

This step down regulator is supposed to be capable of 3A, but I'd not pull anything more than 2A continuously. You must cut the ADJ track on the back and solder the +5v pads together, to get a 5V output.

There is an extra 4 pins associated with this regulator on the PCB. If you use a socket, you can install two 4-pin strips and this will support both ends of the regulator. Just ensure you do not install this upside

down.

POLOLU Power Switch

The Pololu Power Switch is a small module that replaces a mechanical power switch. The main advantage is that the ESP32 can turn this switch off in software, saving the 2S Lipo Battery.

These are relatively cheap from pololu.com ($5USD) and can provide an external pushbutton. This external pushbutton must be a low bounce type (tactile, with click) or the module might not be able to debounce it. Pads are provided on the PCB for an external switch although you can use the onboard pushbutton.

When the device is attached to your battery, the unit will be off. Pressing the on-board (or off board) pushbutton will toggle power to the board.

Mechanical Power Switch (optional)

The mechanical switch shown can be used instead of the Pololu Power Switch. DO NOT INSTALL BOTH. You must use a switch with the mechanical dimensions shown.