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Project 4 – Drone Flight
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Requirements

The drone assembly, calibration, and flight should be accomplished with the use of provided video and text guides provided in the Project statement.

Design

This drone was assembled as follows

- QWinOut Quadcopter frame, legs, and arms are attached together with screws
- 4 motors and props are attached to the arms and connected to ESCs
- The ESCs are connected to a microcontroller (in this case a Kkmulticontroller)
- A radio receiver is attached to the KK board, and the transmitter is paired to the receiver
- A LiPo battery powers the drone and components
- Components are calibrated, such as yaw, roll, and pitch on the KK board, as well as throttle response and trim are checked on the transmitter.
- The drone should take flight

Implementation

The drone was assembled and made a semi successful first flight, but one motor was spinning slightly slower than the others, causing an unintended trip to the ground. When the drone came down, there was a large spark and the KK board seems to have given up its magic smoke. I confirmed that the ESCs and motors are still functioning individually, but the KK board was fried. When the drone hit the ground the board must have made contact with one of the positive pads, as the joints on the lipo terminals are now sparking considerably when the drone is moved. This seems unsafe and I am going to get a new soldering iron and resolder the joints away from the board which rests in the middle. I took pictures of the assembled drone, and a video testing the motors and giving up when I shocked myself.


T8FBBT
RadioLink

Demo

The video does not contain flight, but I will update my submission when I can reassemble it with the minipix instead.

https://drive.google.com/file/d/1ygbkAnatoddi64tzqAU3aSecc40BNjOd/view?usp=sharing

References

https://jhu.instructure.com/courses/64026/pages/module-5-project-04-development-of-assemble-and-fly-quadcopter?module_item_id=3471827