

Electronics Instructions

Electrical Safety Highlights

NO METALLIC WATCHES, BRACELETS, RINGS, ETC.

Proper heat shrink coverage and coloring of bullet connectors

Transmitter is ALWAYS ON when a battery is plugged in

References

[1] "Electrical Fabrication & Calibration," Week 7 & 8 Modules

[2] "Quadcopter Electrical System," Week 7 Lecture

[3] "ESC Calibration," Video Tutorial, Week 7 & 8 Modules

[4] "NAZA Flight Controller Calibration Video Tutorial", Week 7 & 8 Modules

[5] "Flight Procedure Demonstration," Video Tutorial, Week 7 & 8 Modules

[6] "Programming the RC Transmitter," Video Tutorial, Week 7 & 8 Modules

Electrical Fabrication [1, 2]

1. Solder bullet connectors on 4 ESC's, NAZA voltage regulator, and motors as needed.

2. Cover all bullet connectors properly in heat shrink.

ESC Throttle Calibration [1, 3]

Calibrate 4 Electronic Speed Controllers

Materials: Motors, ESCs, transmitter & receiver, battery

Electrical Assembly [1, 2]

Assemble electronics onto quadcopter frame.

- * Ground wires UP into NAZA
- * Ground wires RIGHT into receiver
- * Five receiver to NAZA wires in correct order [1]
- * Wiring harness attached to 4 ESCs and NAZA voltage regulator
- * Bullets connectors fully insulated, cover with electrical tape if needed
- * Remove or tighten propeller nuts in case of motor startup

TA WIRINIG CHECK to receive a battery

NAZA Software Installation [1, 4]

<http://www.dji.com/naza-m-lite/download>

Quadcopter must be plugged into computer & powered with battery when installing software.

Program & calibrate the NAZA.

Watch Flight Procedure Demonstration [5]

Motor Spin Direction

Check motor direction and change as needed.

Change direction by interchanging 2 of the 3 connectors between ESC and motor.

Dynamic Motor Response with TA

Check motor spin direction.

TA securely holds quadcopter and student pilot starts motors and sets approx. 25% throttle

TA tilts quadcopter forward/back, right/left to check for correct motor response

Return battery to TA in exchange for propellers

For each propeller, determine:

- Which way is right-side-up?
- Which direction does it spin?

Attach propellers to correct motors.

Final Flight Check

When quadcopter is FULLY ASSEMBLED, double check propeller orientation and wiring.

Ask for battery and flight supervision from TA.

First Flight with TA 😊

Video Record Every Flight!

RC Troubleshooting [6]

Trim (“centering”) of remote control response.

Reverse direction of response of throttle stick during ESC calibration.