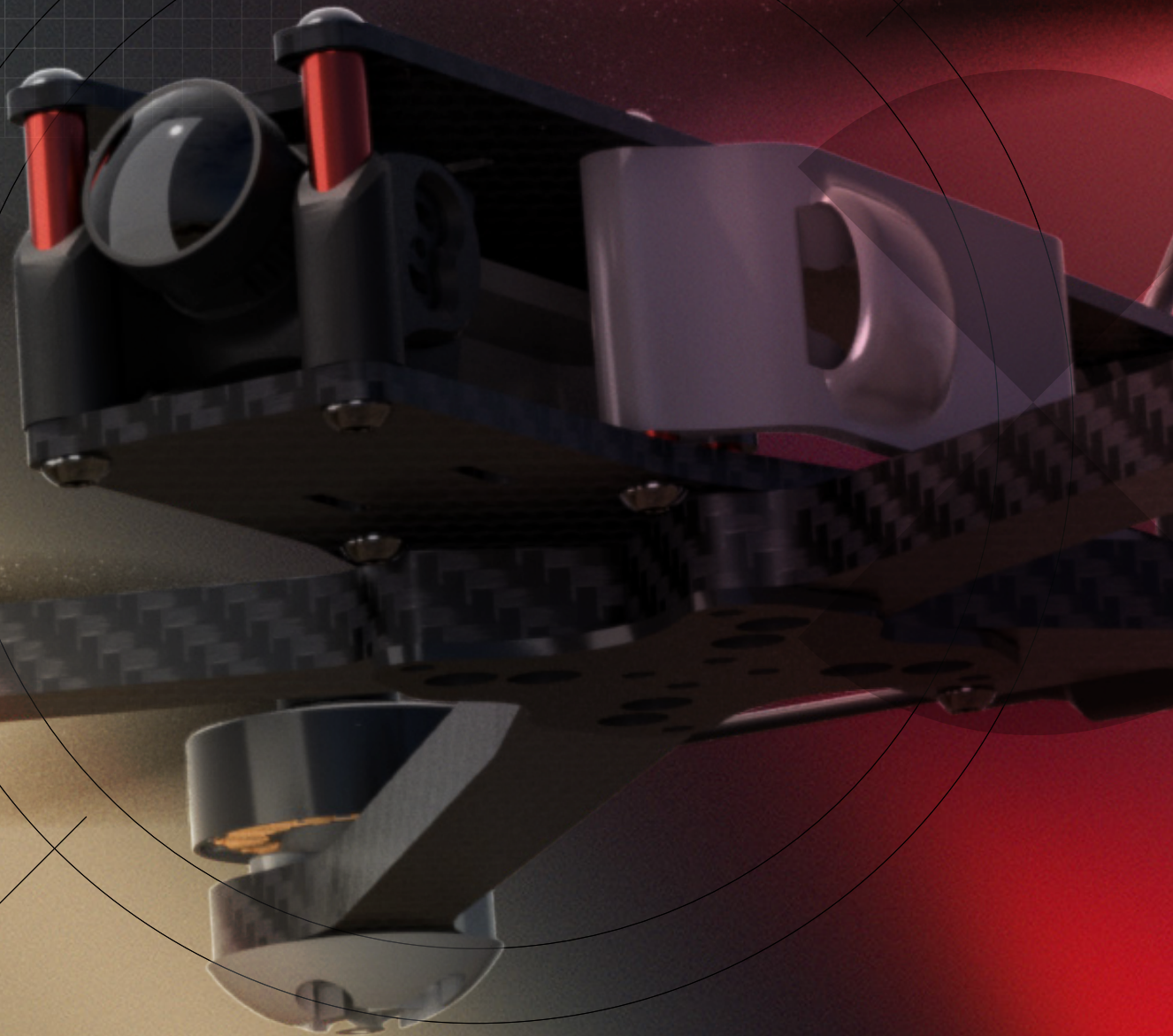


DIY KIT PROCEDURES

FangTM F7



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1.0 Kit Contents

Note: Several boxes in this kit contain multiple wires and components. Not all included parts are required for this assembly. Use only the components specified in this section; all required parts are included in the kit.

The DIY kit includes:

- Carbon fiber drone chassis parts (1 bag)
- Propellers (1 bag; 4 total: 2 CW, 2 CCW)
- Battery straps, antenna, and mounting hardware (1 bag)
- Motors with required hardware (4 bags)
- BRAVE 55A ESC – AM32 (1)
- BRAVE F7 Flight Controller (1)
- AURA VTX (1 box)
- Camera (1 box)
- ELRS Dual 915 MHz 150 mW PCB (1)
- M10000548 (1 bag; 2 units)
- MCBL-00076-1 (1)
- Accessory kit (1 bag; includes heat shrink, cable management, double-sided tape, 1000 μ F capacitor, and camera harness)



Figure 1: FANG 7 DIY Kit Contents

2.0 Required Parts

Note: There are extra components included within this kit. The following picture and BoM show which parts are to be used to complete the Fang 7" DIY build

- 1x Loose-end four-cable harness
- 1x Analog camera harness
- 1x 1000 μ F Capacitor
- 1x Eight cable harness
- 1x Antenna
- 1x Antenna harness
- 2x M10000548
- 1x ELRS PCBA
- 1x Flight Controller PCBA with 4x rubber grommets
- 1x ESC PCBA with 4x rubber grommets
- 1x Battery cable
- 1x AURA VTX
- 1x Camera
- 4x Motors with hardware
- 1x Bag of drone chassis parts
- 2x Velcro straps
- 4x Motor mount caps
- 1x RRSL 7" bag of hardware
- 1x Set of camera mounting brackets
- 1x Set of antenna mounts
- 2x Long cable management holders
- 2x Short cable management holders
- 1x Battery pad
- 1x Piece of 3M double-sided tape
- 1x MCBL-00076-1
- 2x CW propellers
- 2x CCW propellers



Figure 2: Required Parts

3.0 Assembly Procedures

3.1 PROCESS 1: BOTTOM HALF ASSEMBLY

3.1.1 Arm Installation

1. Install the arms to the bottom panel (circled in red below) using the provided 8x M3×14 mm screws and the H2.0 screw driver.

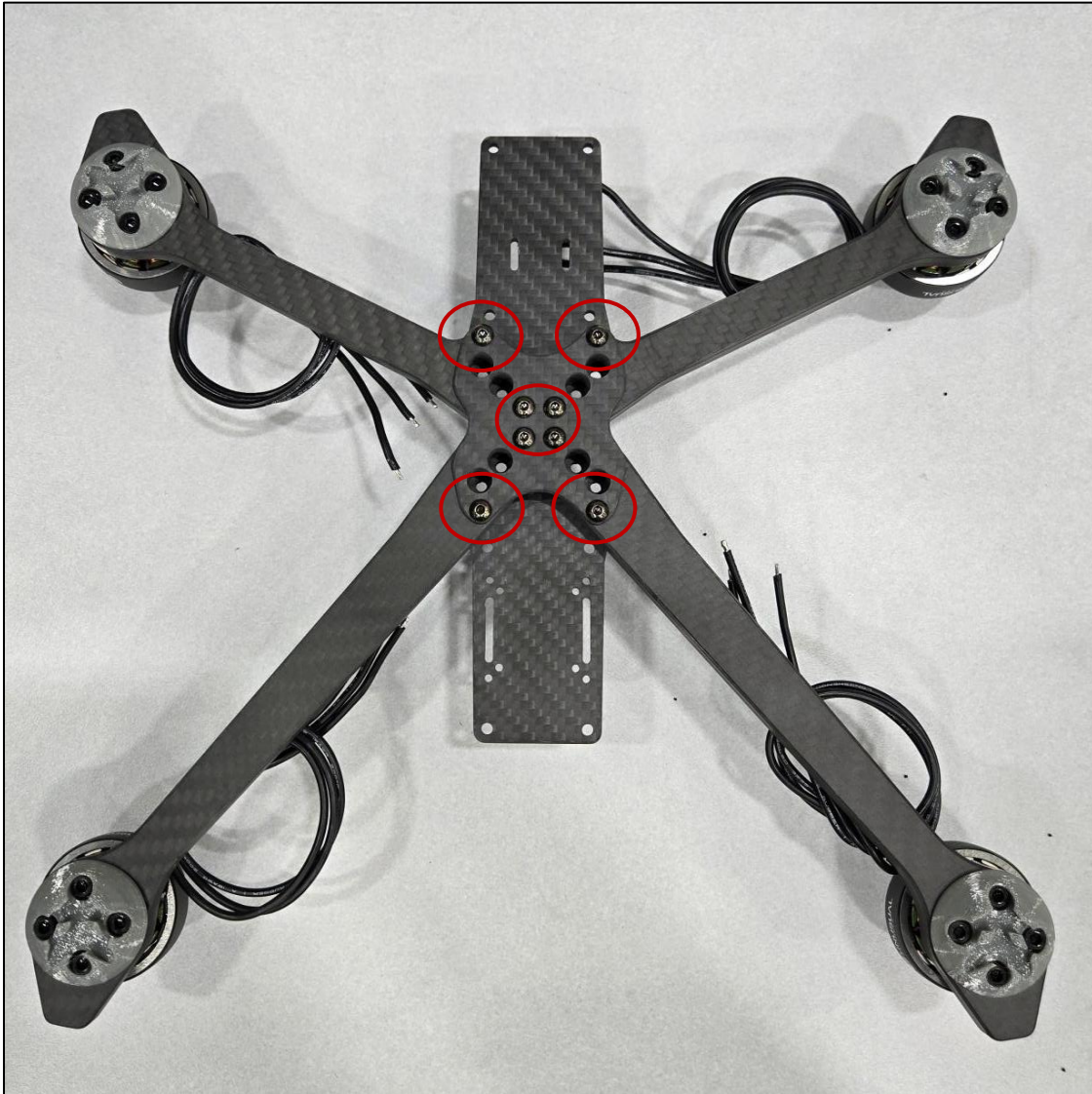


Figure 3: FANG 7 – Complete Bottom Panel View

3.1.2 Motors and Motor Caps Installation

1. Position each motor on the end of the corresponding arm.
2. Place the motor cap over the motor.
3. Insert four screws through the motor cap and into the motor.
4. Tighten the screws using an H2.5 driver to secure the motor and motor cap to the arm.



Figure 4: Motor and Motor Cap Installation

3.1.3 Spacers Installation

1. Install the spacers using the provided M3×12 mm screws and an H2.0 driver.

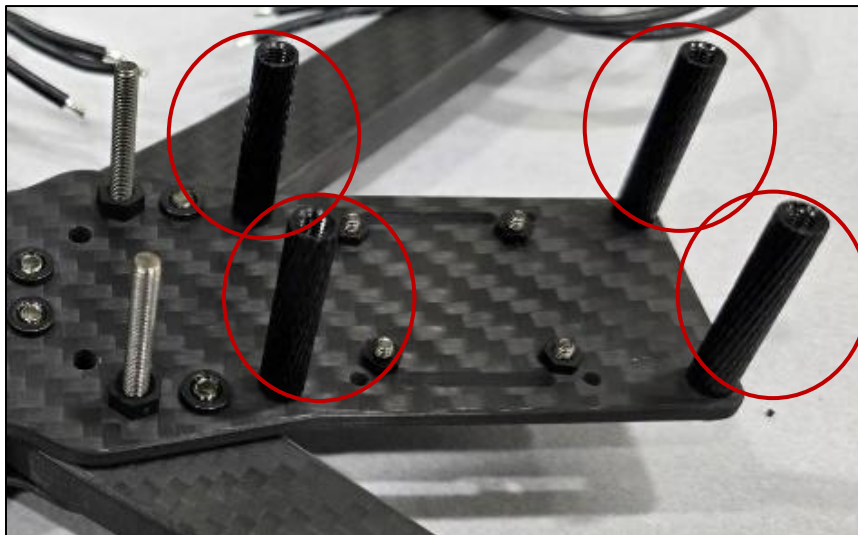


Figure 5: Spacer Installation

3.1.4 Mount Installation

1. Install the AURA VTX with the M2×5 mm screws (circled in red in the image below) and provided M2 nuts using an H1.5 screw driver.

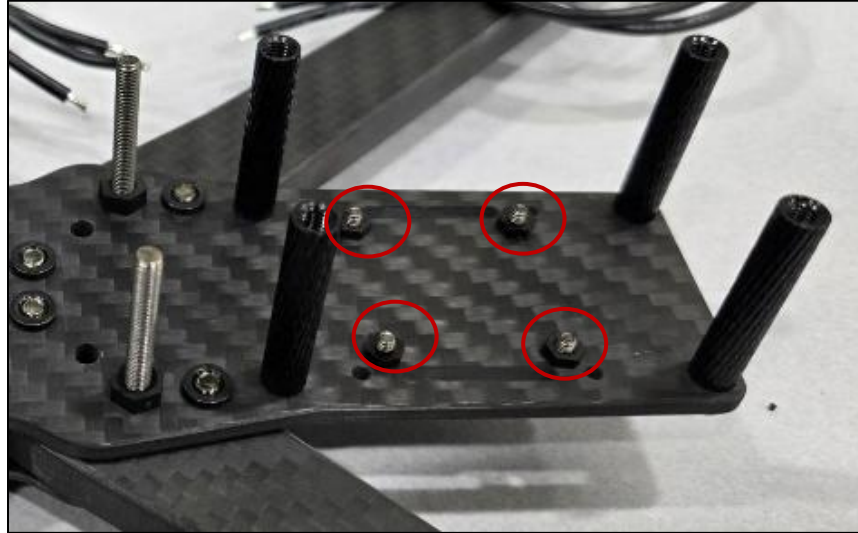


Figure 6: AURA VTX Mounting

2. Install the Flight Controller and ESC PCBAs using the M3×25 mm screws (circled in red below), provided M3 nuts, and an H2.0 driver.

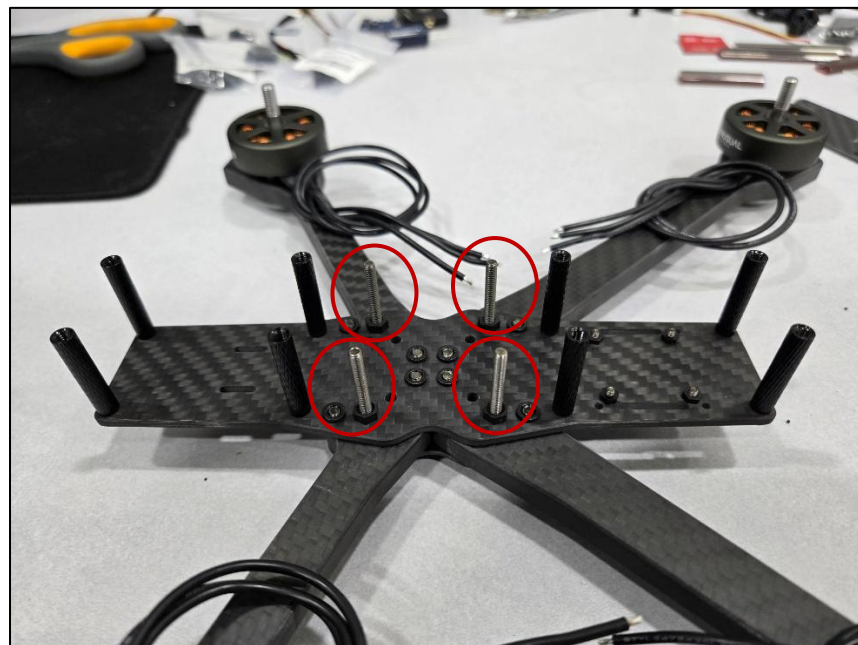


Figure 7: Flight Controller and ESC PCBA Mounting

3.1.5 Camera Bracket Installation

1. Slide the camera brackets onto the front two spacers.
2. Align the camera mounting holes with the bracket holes.
3. Secure the camera using two M2×4 mm screws and an H1.5 driver.

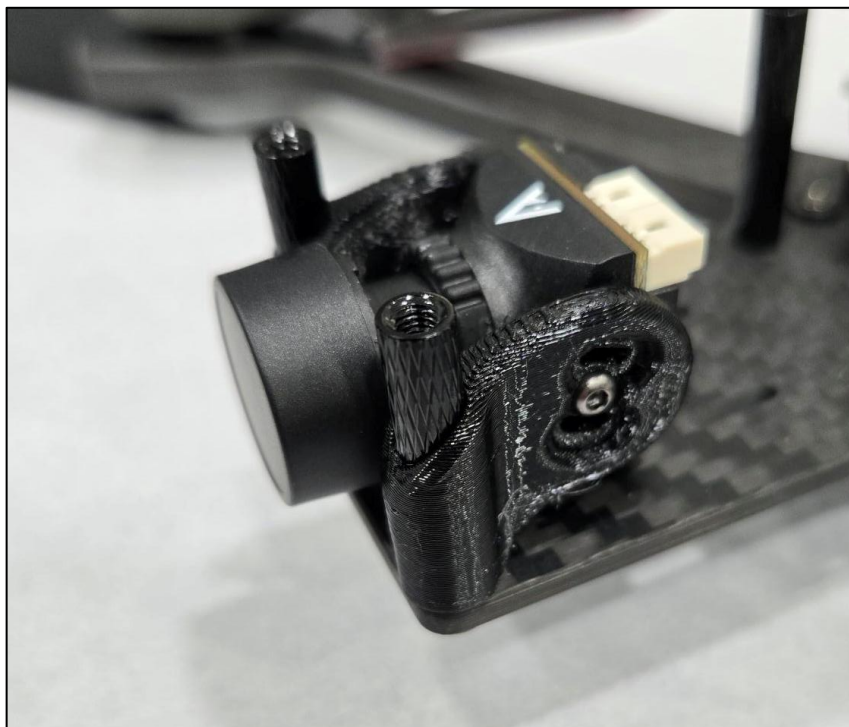


Figure 8: Camera Bracket and Camera Installation

3.1.6 Antenna Mounts Installation

1. Insert the two antennas into the antenna mount.
2. Slide the assembly onto the rear two spacers.



Figure 9: Antenna Mount Placement

3. Remove the nut and washer from the antenna harness prior to installation.
4. Install the antenna harness into the top antenna mount.
5. Align the black mount with the antenna connector (gold) and ensure the rear plate with threaded holes is positioned correctly.
6. Secure the antenna harness using the provided M3×5 mm screws.

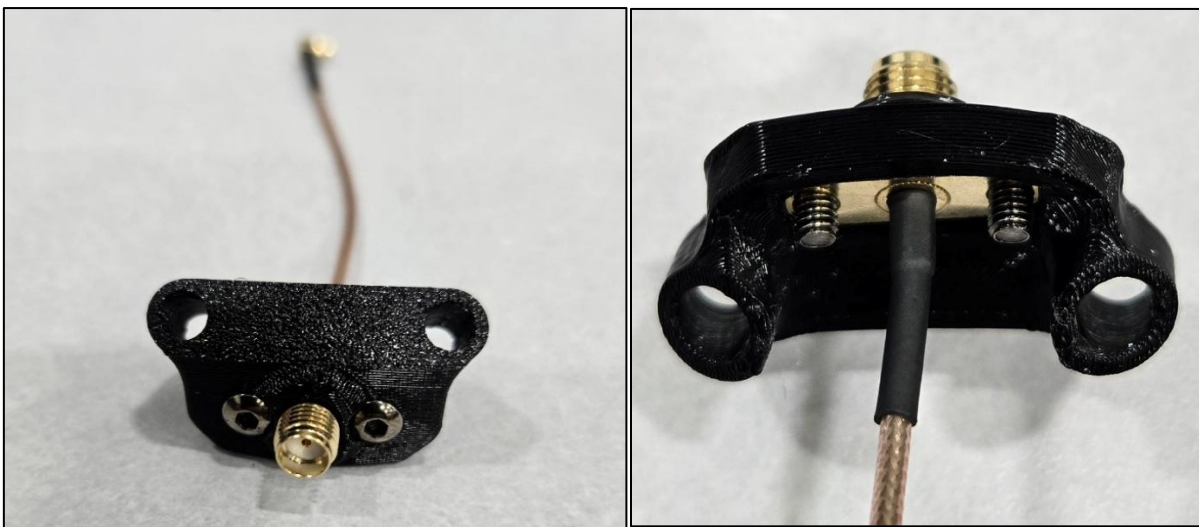


Figure 10: Antenna Harness Installation

7. Prepare the antenna assembly by removing the nut and washer from the antenna harness and installing the harness into the antenna mount.
8. Secure the AURA VTX using the previously installed M2 screws and an H1.5 driver.
9. Install the antenna mount assembly by sliding it onto the rear two spacers.
10. Thread the antenna onto the bulkhead connector.
11. Connect the MMCX connector to the AURA VTX.

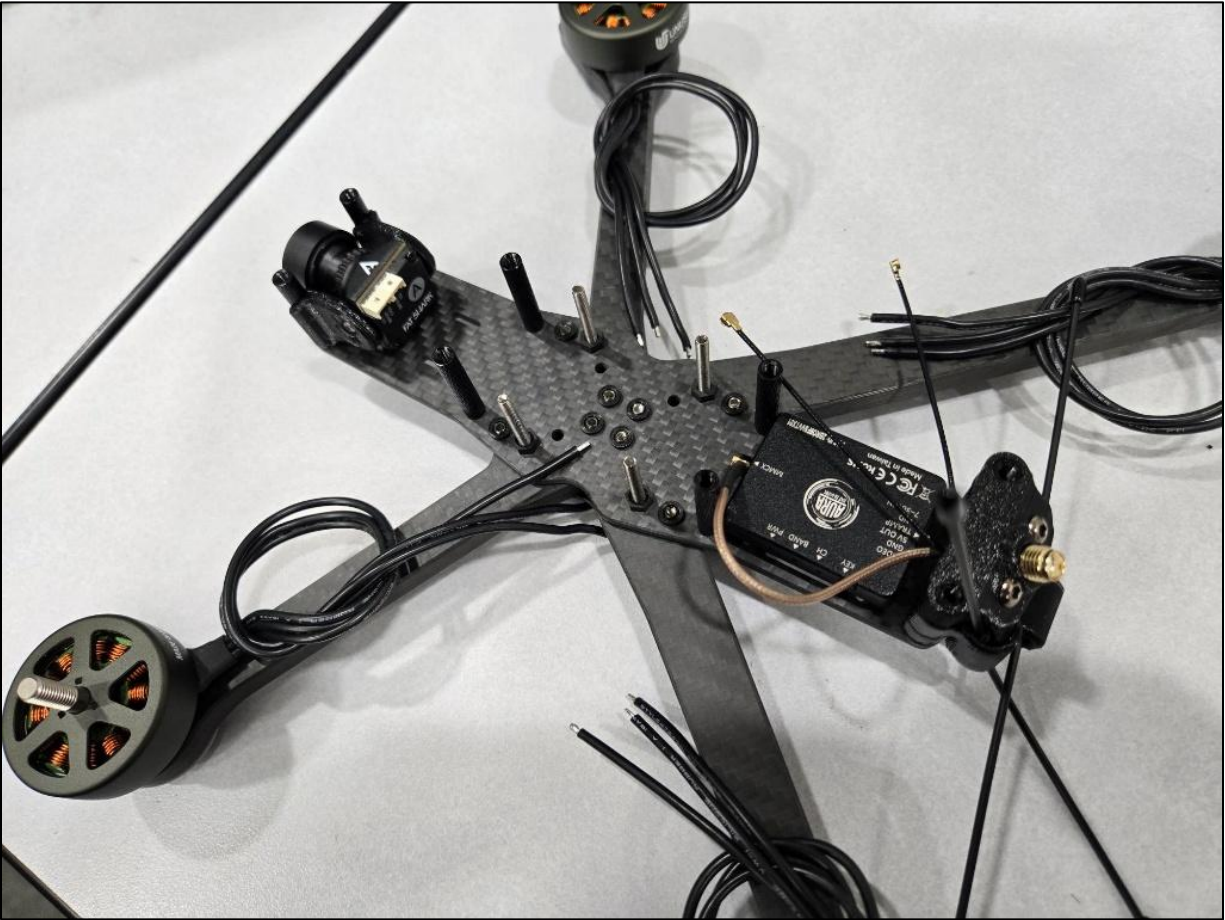


Figure 11: Final Antenna and VTX Connection

3.2 PROCESS 2: ELECTRICAL ASSEMBLY AND SOLDERING

3.2.1 ESC PCBA Installation

1. Install four rubber grommets into the through-holes on the ESC PCBA.
2. Place one white plastic spacer onto each PCBA mounting screw.
3. Position the first ESC PCBA onto the mounting screws.

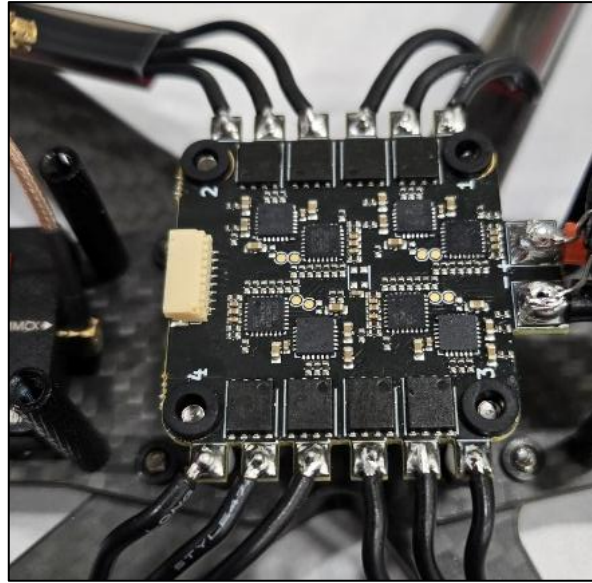


Figure 12: ESC PCBA Mounting Orientation

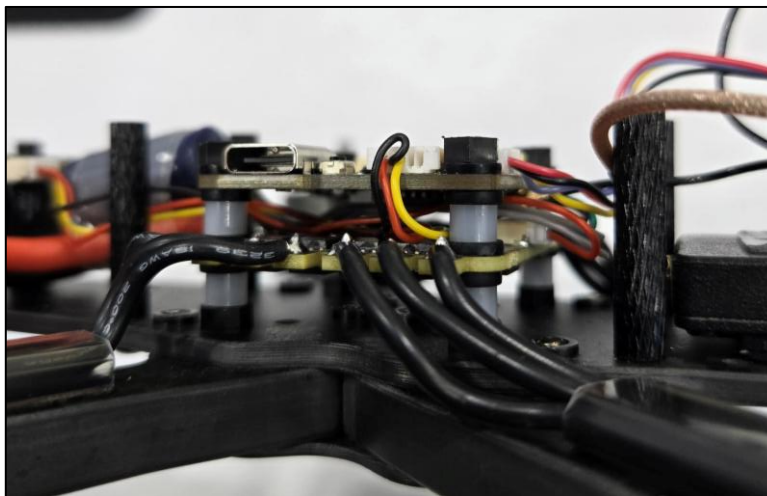


Figure 13: ESC PCBA Mounting – Stacked Orientation

3.2.2 Motor Wire Routing and Preparation

1. Route the motor wires through the cable management holders.
2. Use the long wire management holders on the long arms.
3. Use the short wire management holders on the short arms.
 - Do not adhere the cable management holders to the arms at this stage.
4. Cut the motor wires to the appropriate length.
5. Strip approximately 3 mm of insulation from each wire.

3.2.3 Motor Wire Soldering

1. Solder the wires to the ESC PCBA as shown in the image below.
2. Maintain the same wire orientation as it exits the motors.

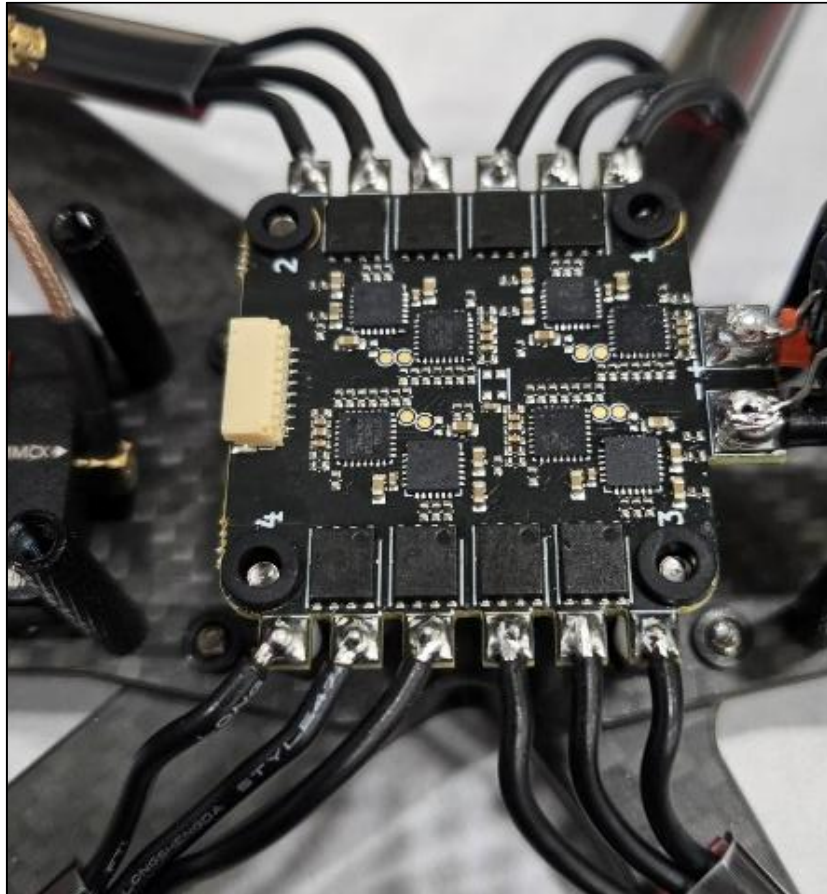


Figure 14: Motor Wire Soldering Orientation

3.2.4 Battery Cable and Capacitor Installation

1. Solder the battery cable and 1000 μ F capacitor to the ESC PCBA as shown in the image below.
 - **Note:** Do not use the included 470 μ F capacitor. This assembly requires the 1000 μ F capacitor provided in the kit.
2. Apply the provided heat shrink over the connection.
3. Stretch the heat shrink as needed to fit over the capacitor and battery cable.

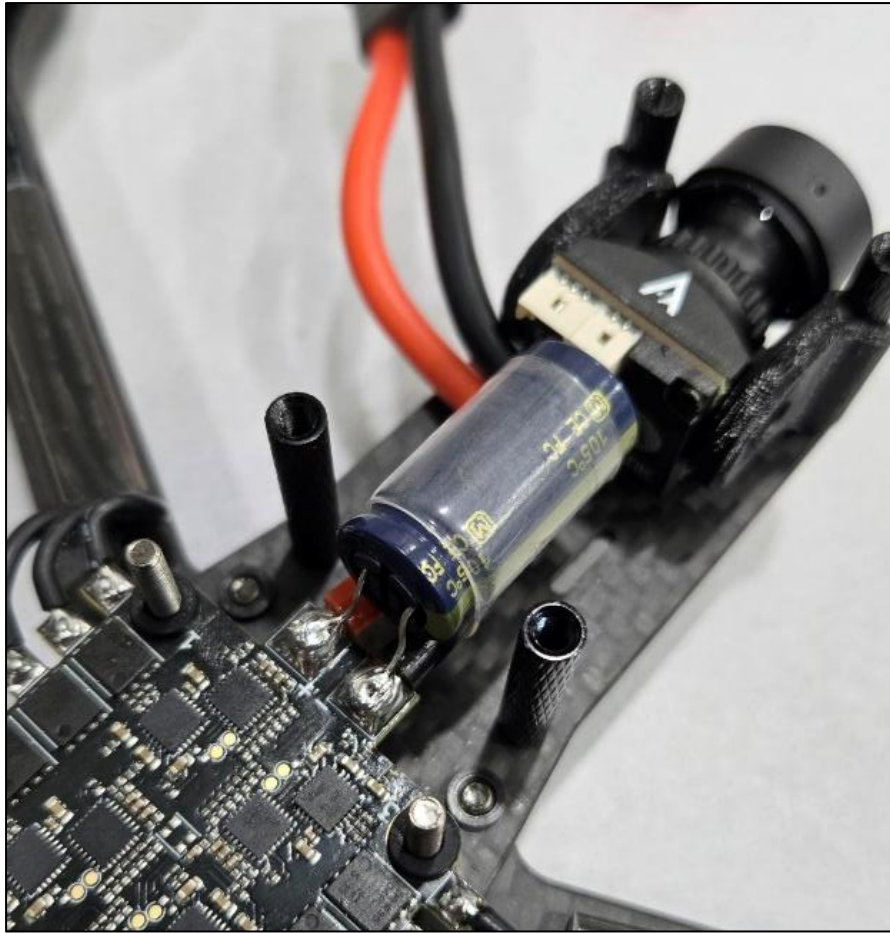


Figure 15: Battery Cable and Capacitor Assembly

3.2.5 Cable Management Installation

1. Ensure the ESC PCBA is fully seated.
2. Remove the adhesive backing from the cable management holders.
3. Secure the cable management holders to the arms.



Figure 16: Cable Management Placement

3.2.7 Flight Controller Installation and System Integration

1. Connect the 8-wire harness to the ESC and Flight Controller.
2. Place white plastic spacers on top of the ESC PCBA mounting screws.
3. Position the second Flight Controller PCBA onto the spacers.
4. Secure the Flight Controller using four M3 nuts and the provided 5.5 mm nut driver.
5. Ensure the Flight Controller is oriented as shown in the image below.

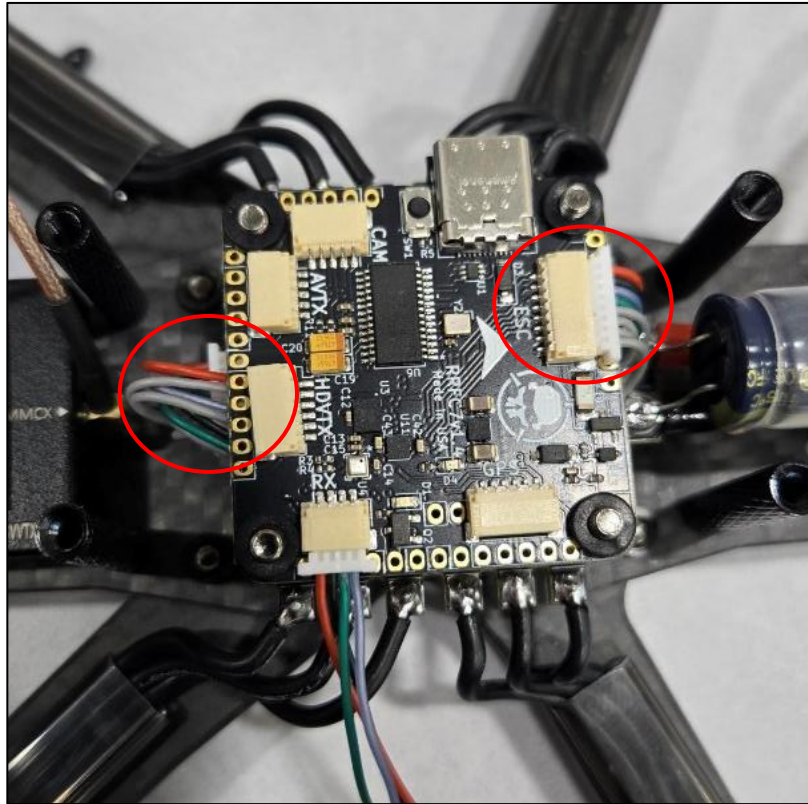


Figure 19: Flight Controller Installation Orientation

3.2.8 Final Connections

1. Apply 3M double-sided tape to the top of the AURA VTX.
2. Secure the ELRS PCBA to the AURA VTX.
3. Connect the antenna harnesses to the ELRS PCBA.
4. Connect the camera harness.

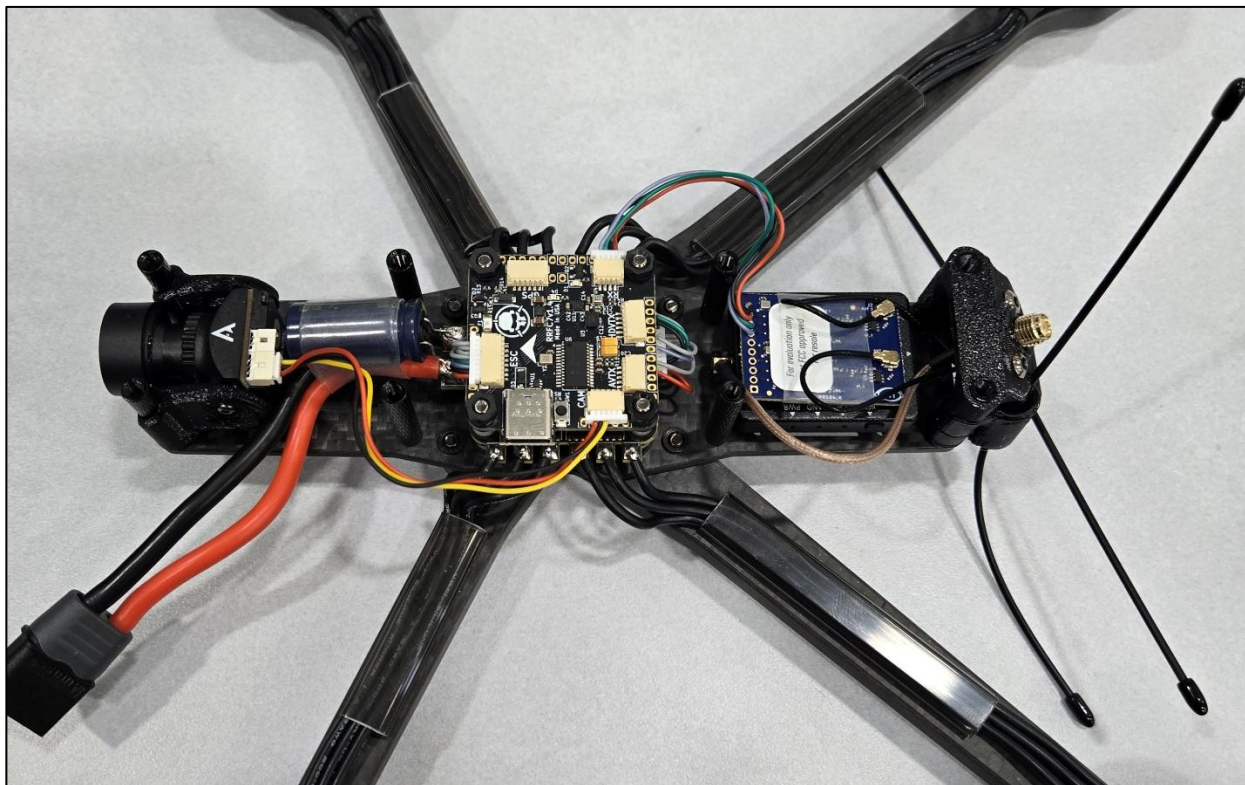


Figure 20: Final Wiring and Component Placement

3.3 PROCESS 3: TOP PLATE AND PROPELLER INSTALLATION

3.3.1 Install adhesive battery pad and Velcro straps

1. Apply the adhesive battery pad to the top plate as shown in the figure below.

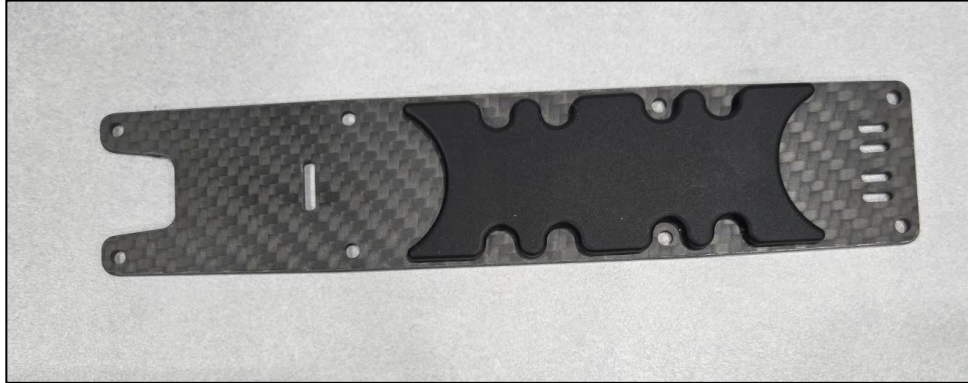


Figure 21: Battery Pad Placement

2. Position the top plate onto the spacers.
3. Secure the top plate using the provided M3×12 mm screws and an H2.0 driver.

3.3.2 Antenna Installation

1. Thread the antenna onto the antenna bulkhead connector at the rear of the drone.

3.3.3 Battery Strap Installation

1. Slide the two Velcro battery straps under the top plate.
2. Position the straps evenly for proper battery retention.

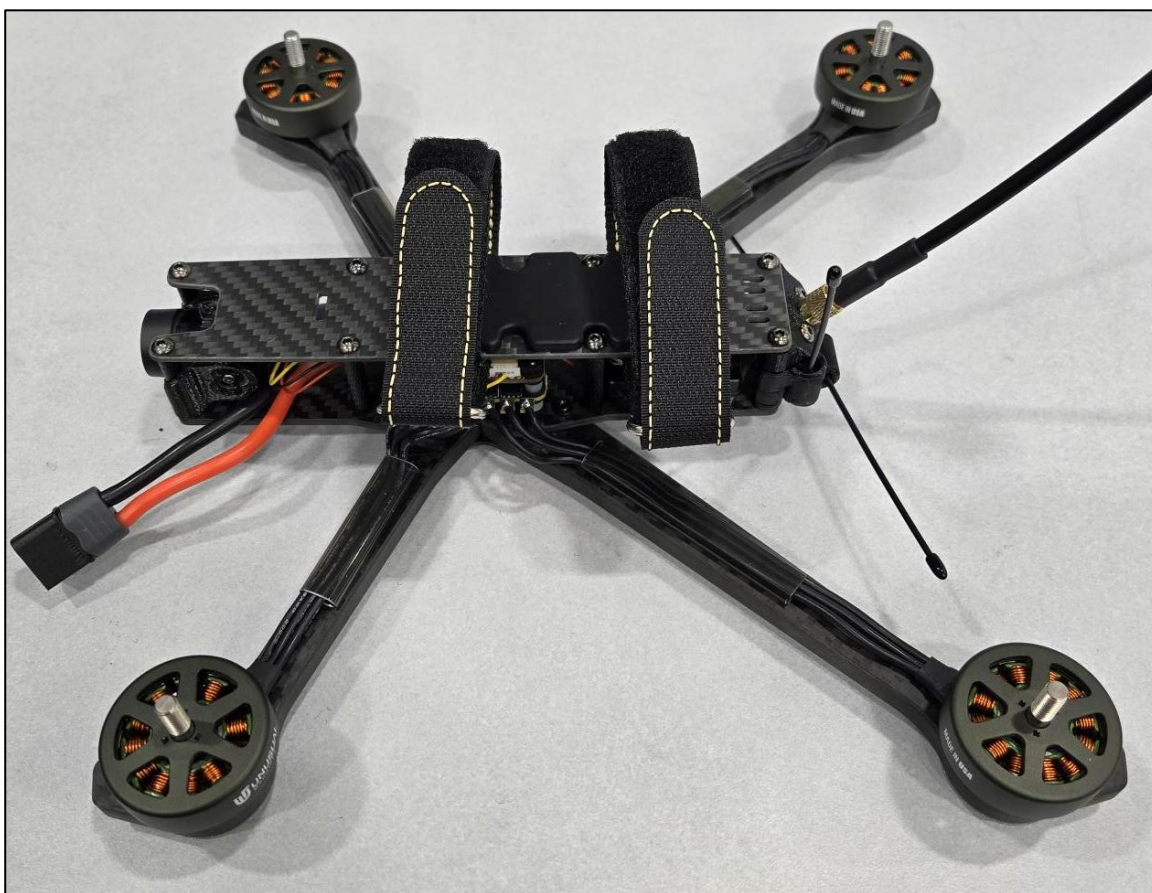


Figure 22: Battery Strap Routing

3.3.4 Propeller Installation

1. Install the propellers onto the motors using the provided locknuts and an 8 mm nut driver.
2. Install the clockwise (CW) propellers on the front left and rear right motors.
3. Install the counterclockwise (CCW) propellers on the front right and rear left motors.

Propeller Installation Guide

Reverse Propeller Rotation Guide



Propeller ID Number

This number is used to identify the size and pitch of the propeller. You can also use this number as a reference to differentiate rotation between clockwise (CW) and counter-clockwise (CCW) props.



Propeller Lock-Nuts

Always use lock-nuts and tighten with the proper size socket. Do not use thread lock on these. Never use a metal vise grip or other metal tools to hold the motor bell housing; this will cause damage to the motor.



BEFORE YOU FLY

- Ensure your propellers are firmly mounted on the motors and that they do not spin freely on the motor shaft.
- An occasional screeching sound when accelerating may be indicative that a propeller is not properly tightened.
- Failure to adequately install propellers may result in loss of control of the drone.

Figure 23 : Propeller Orientation Guide

3.3.5 Assembly Completion

The FANG 7" DIY assembly is now complete.