T2 VTOL PNP With FC Assembly Guide

Disclaimer

Please read the terms and conditions of this disclaimer carefully before use. Once using, you acknowledge and accept all contents of this disclaimer and its related terms. Please strictly adhere to the manual for the installation and operation of this product. The manufacturer and its affiliates shall not be held liable for any damages caused by improper use of the product by user.

When using the aircraft model, please strictly comply with local laws and regulations. Users shall bear all consequences arising from modifications, improper operation, or engagement in illegal activities.

Keep the aircraft model out of reach of children. Ensure it is flown away from crowds and hazardous objects. Do not operate the aircraft model under the influence of drunk, fatigue, or impaired mental state. The manufacturer shall not be held liable for any direct, indirect, or consequential damages or injuries resulting from any cause.

Military use is strictly prohibited.

In the event of any divergence between language versions, the Chinese version applies in China; the English version applies elsewhere.

Precautions

1. Before flying, ensure the surrounding environment is safe.
2. Always operate within sight.
3. For versions installed with flight controller, wait for the flight controller’s green light on (indicating successful GPS positioning) before flying.
4. Before flying, perform checks on the control surfaces, verify radio commands, and calibrate the flight controller's stabilization system.
5. There is no battery level display during flight. Users should estimate battery level and return in time.
6. The products must be used by users aged 14 and above.

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Product List

T2 Storage & Transportation Foam Case*1

Fuselage*1
Left wing*1
Right wing *1
Horizontal Tail *1
Vertical Tail *1
Tail boom *1
Fuselage CF rod *2

T2 Horns Accessories bag *1
T2 Screw bag *1
T2 Hatch part bag *1
T2 Wooden plate bag *1
Skid Accessories package *1
Flap decal *1
GPS and cables bag *1
1060 GF Propeller *2

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1.Flight Controller and Receiver Connection

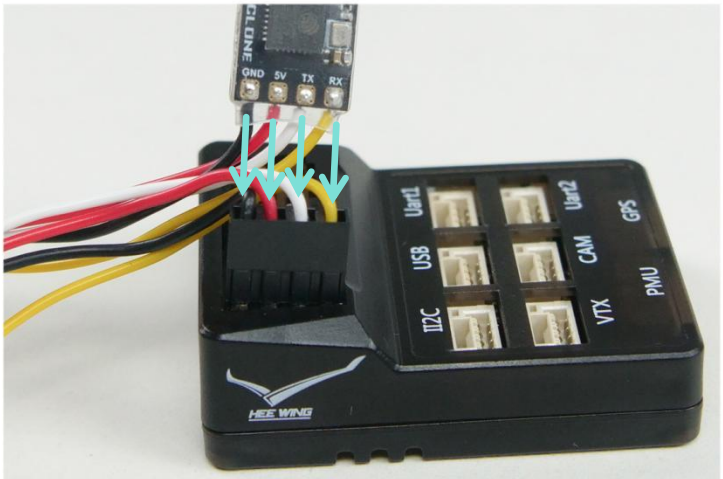
Please prepare Fuselage, **Flight controller USB Cable**[1], Radio, **Receiver**[2]and Battery. (NOTE: T2 VTOL PNP with FC version does not includes radio, receiver and battery, which need to be provided by the user. The following demonstration uses a Mode 2 (Throttle on left stick) Pocket radio as an example.)

Note:

Flight controller USB Cable[1]: The cable is included GPS and cables bag.

Receiver[2]: GPS and cables bag includes 4pin connector.

Plug the receiver into the RC-IN port on the flight controller.



Pay attention to the direction of the plug

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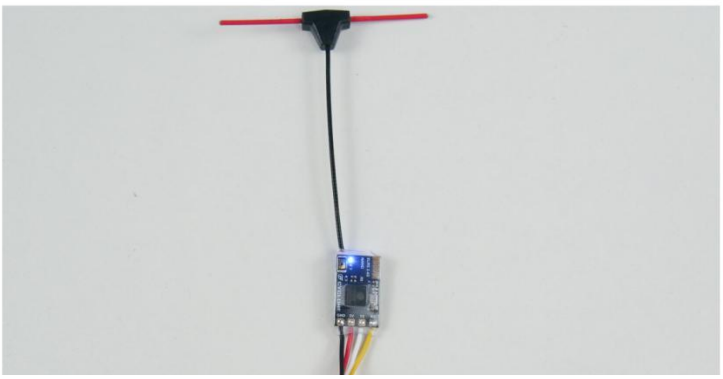
1.Flight Controller and Receiver Connection

Turn on radio, ensure it is in normal status (The Pocket radio shows green light on during normal status.)

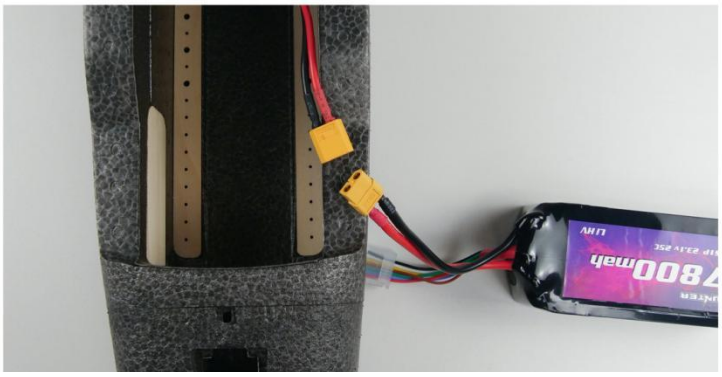


If the receiver's light remains constantly on after turning on radio and power on aircraft, the connection is successful. If connected successfully, you may skip the next step of Binding instructions.

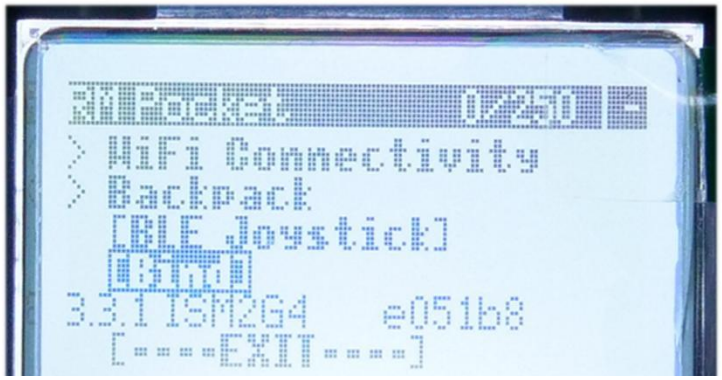
Binding Instructions

Press 'SYS' button on radio, then click 'ExpressLRS' (Press the scroll wheel to confirm/select.)

Please wait for the progress bar to finish loading. Do not press any buttons or scroll wheel during the process.



Plug and unplug the power supply three times consecutively. On the third time, keep the battery connected. Then observe if the receiver's indicator light double flash.



Press "Bind" when the receiver light doube-flashed. After pressing, it will connect automatically. If the connection is successful, the indicator light on the receiver will remain on constantly.

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RC Battery installed instructions

Pocket radio shows a green light during normal status

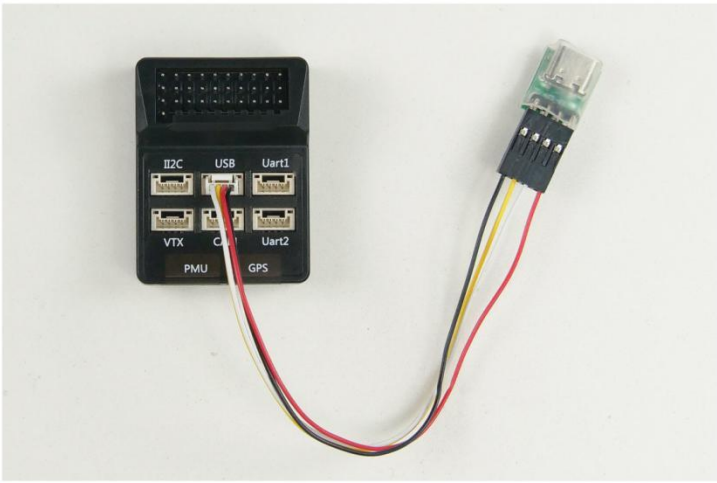
If the light is not on, you need to check if the battery is installed.

Pocket requires 2 pcs of 18650 flat-top batteries.

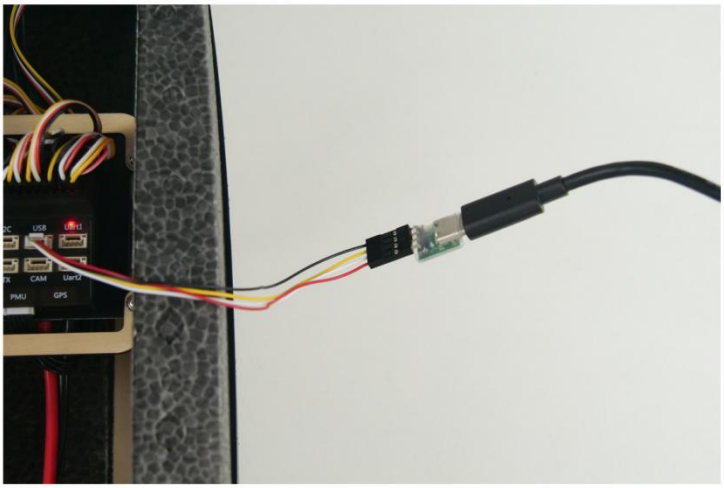
The postion is shown as right picture.

Note the battery polarity.

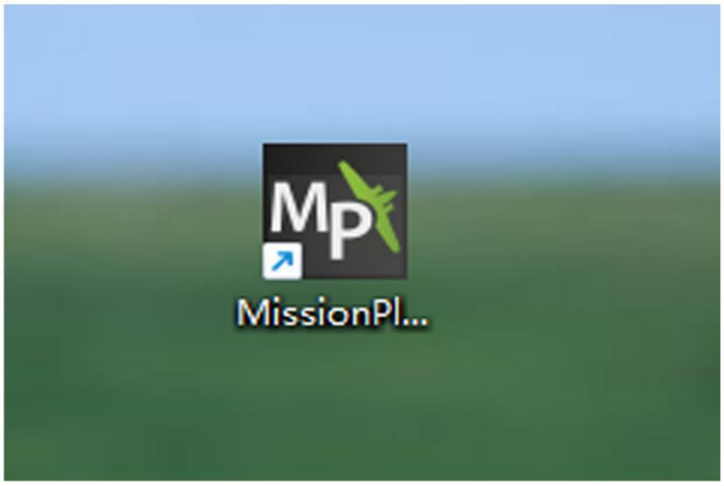
1.Flight Controller and Receiver Connection



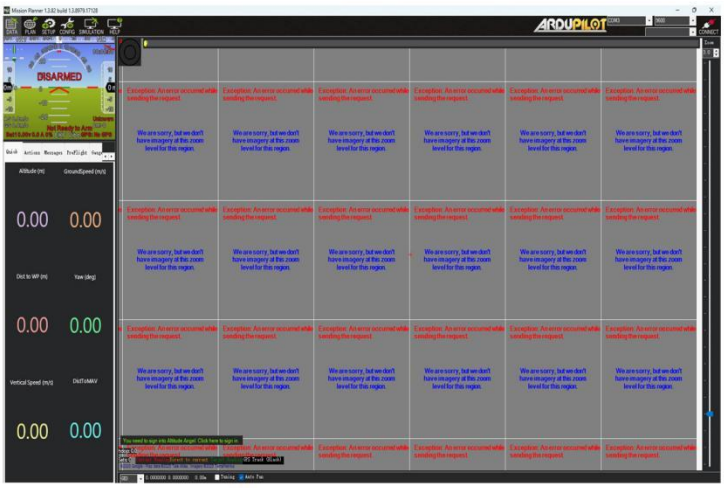
Connect USB adapter cable to the USB Port on the FC.



Connect the Type-C USB cable[1] to the FC's USB port and the other end to your PC.



Open MissionPlanner software



Note: Type-C USB cable[1]: Some dual Type-C cables may prevent computer detection of flight controllers.

Recommend Solution: Use 'Type-A to Type-C' cables. As shown the right picture.

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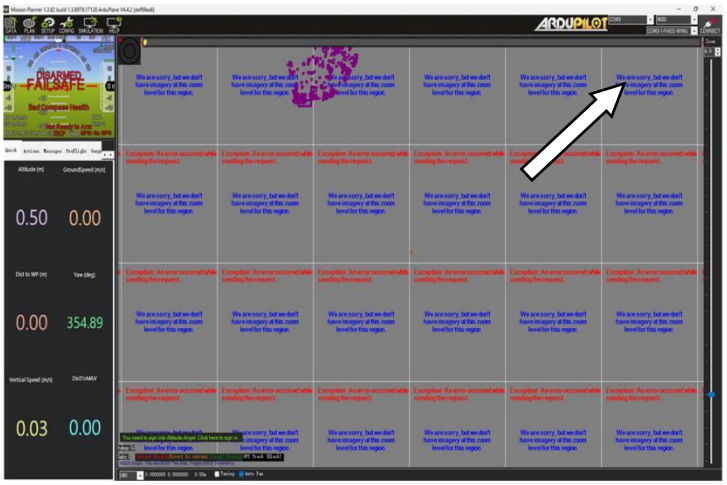
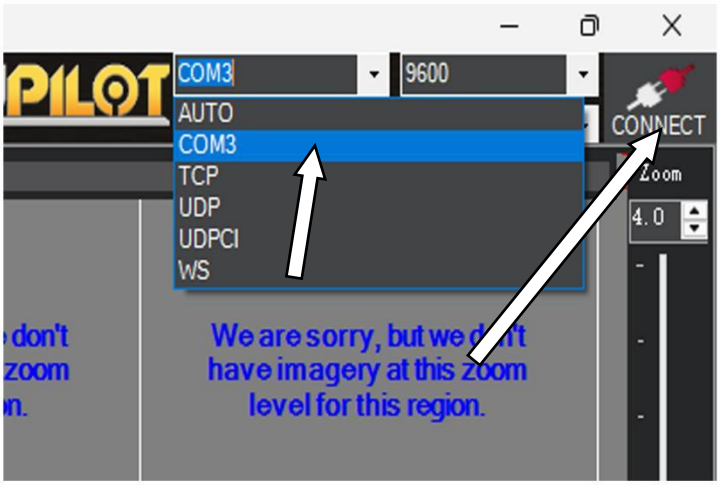
1.Flight Controller and Receiver Connection

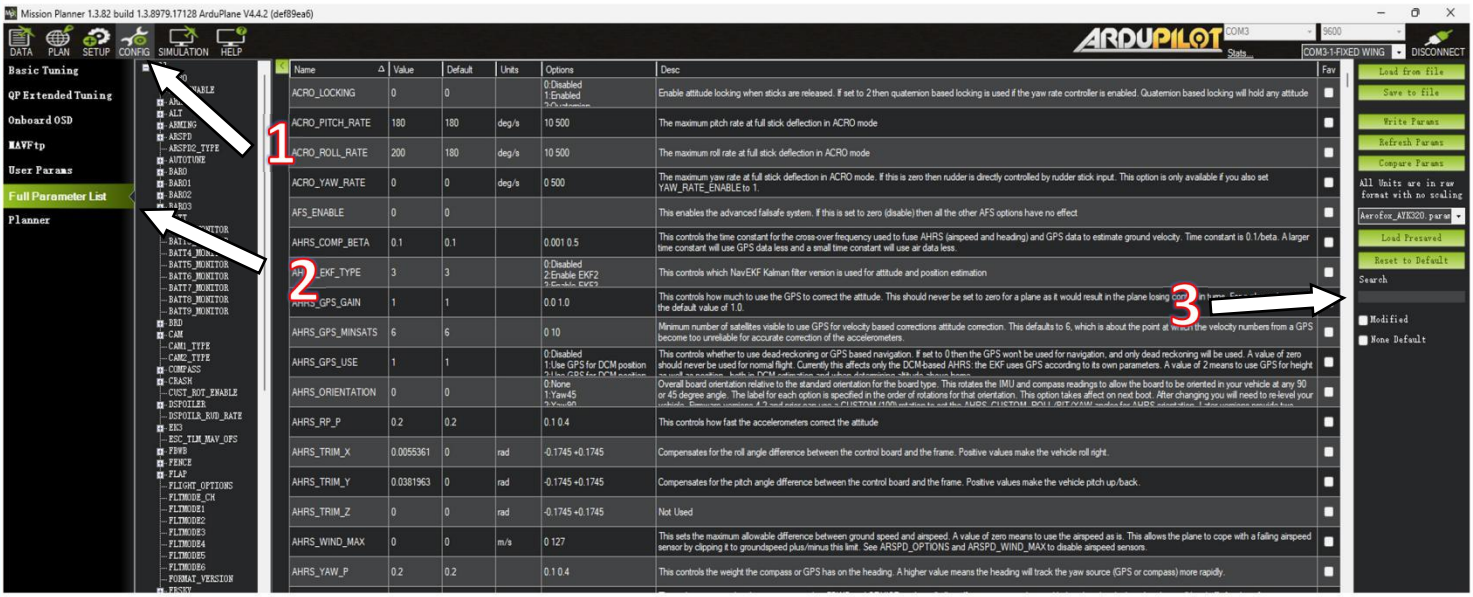




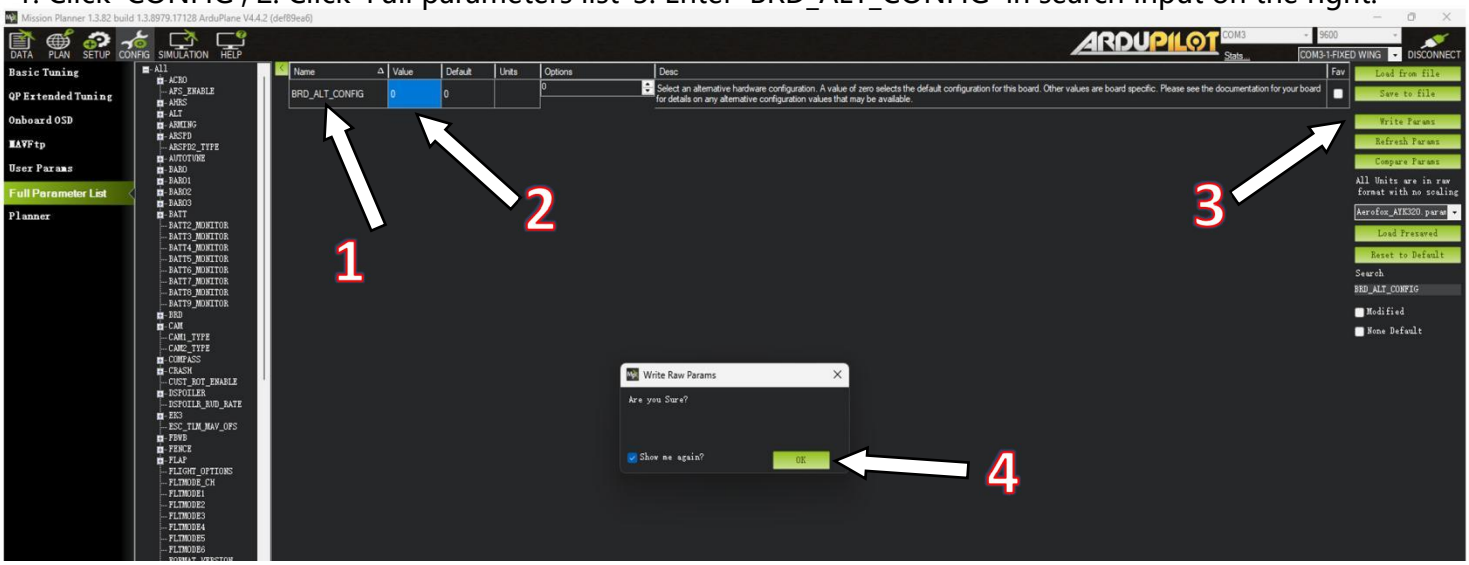
Click' COM' port (**Note:** The number after 'COM' varies by computer - Choose yours), then click 'Connect'.

NOTE: Ignore any software error prompts after successful connection.

Ardupilot automatically recognizes ELRS input. For SBUS receiver, please follow steps below.



1. Click ‘CONFIG’, 2. Click ‘Full parameters list’ 3. Enter 'BRD_ALT_CONFIG' in search input on the right.



1.Confirm the name is 'BRD_ALT_CONFIG', 2. Change the value from 1 to 0.

3. Click 'Write Parameters', 4. Click 'OK' to complete the setup

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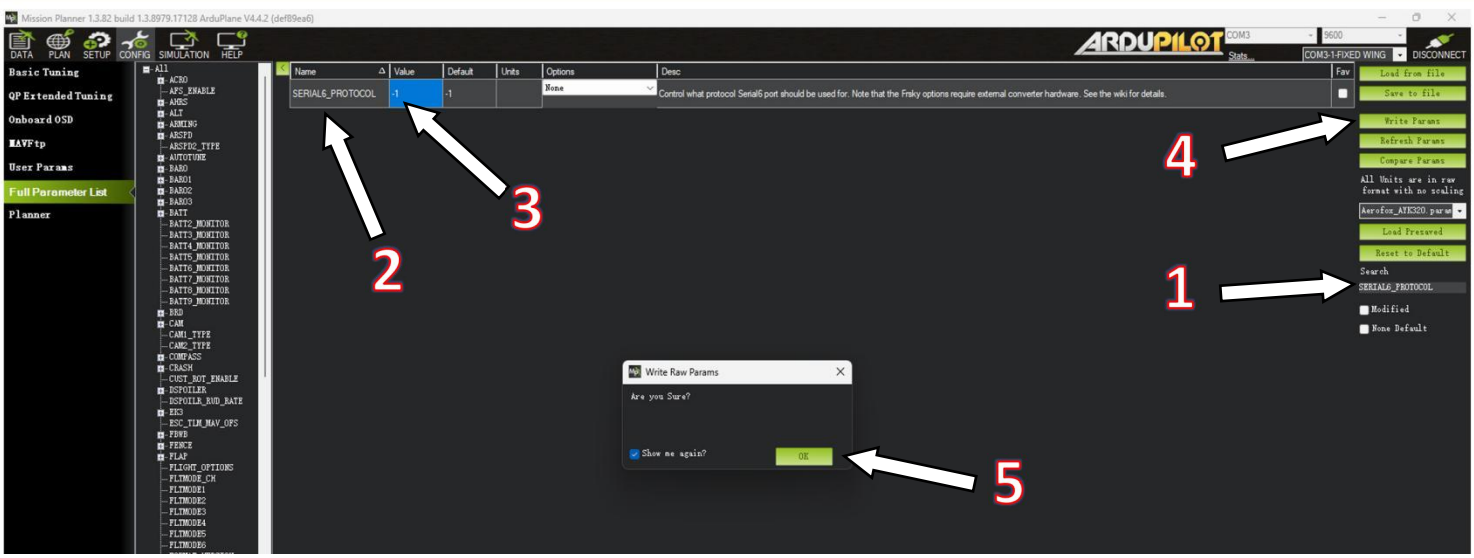


1. Enter 'SERIAL6_PROTOCOL' in search input on the right; 2. Confirm the name is ' SERIAL6_PROTOCOL'; 3. Change the value from 23 to -1; 4. Click 'write parameters'; 5. Click 'OK' to compelet the setup.
IMPORTANT, after the above is completed, before we procced to next step, click 'Disconnect' on the top right of the screen > disconnect the USB cable from the flight controller and the PC > disconnect the battery . When you connect the battery again, SBUS should be working now.

SBUS receiver protocol has been completed

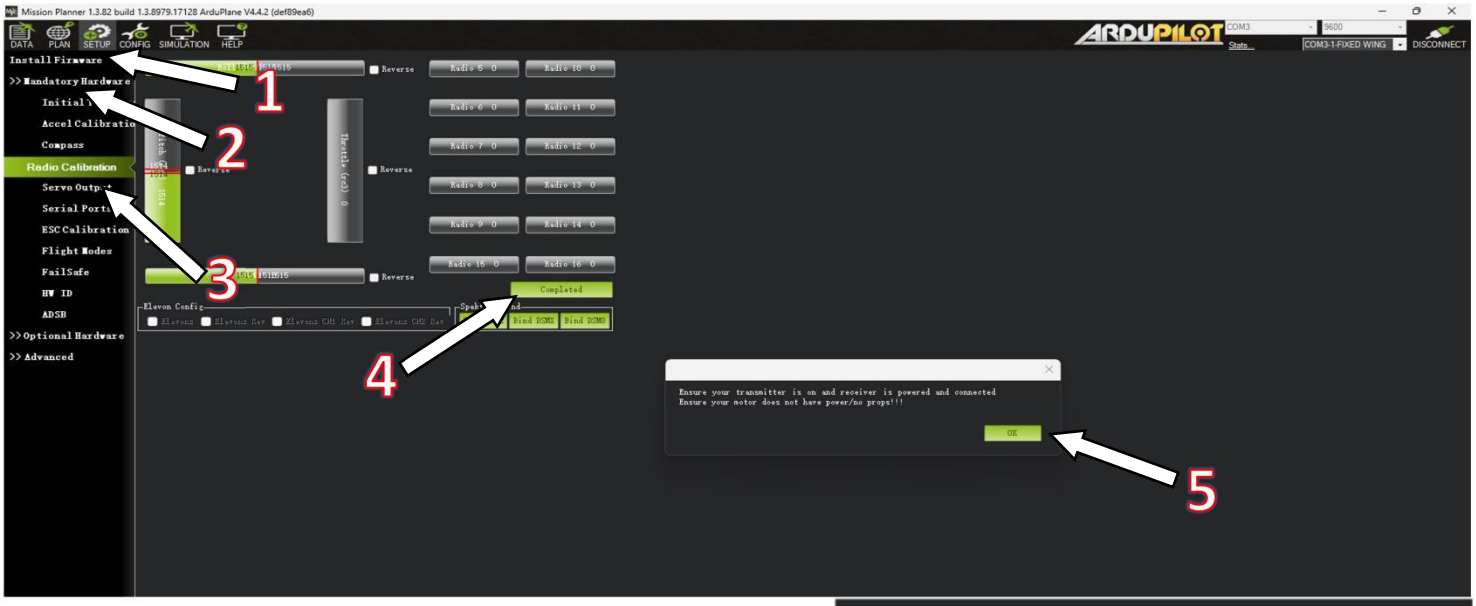
Below are the relevant parameters for your reference, the setup procedure are same as above.

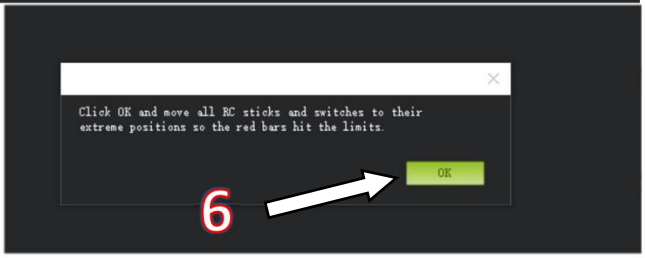
SBUS receiver setup : BRD_ALT_CONFIG = 0 ; SERIAL6_PROTOCOL = -1

CRSF/ELRS receiver setup : BRD_ALT_CONFIG = 1 ; SERIAL6_PROTOCOL = 23

2.Radio Calibration

Turn on radio and power on aircraft, connect USB cable to the flight controller and the other end to your PC, then open mission planner.





1. Click 'Setup'
2. Click 'Mandatory Hardware'
3. Click 'Radio Calibration '
4. Click 'Calibration Radio'
5. Click 'OK'
6. Click 'OK'

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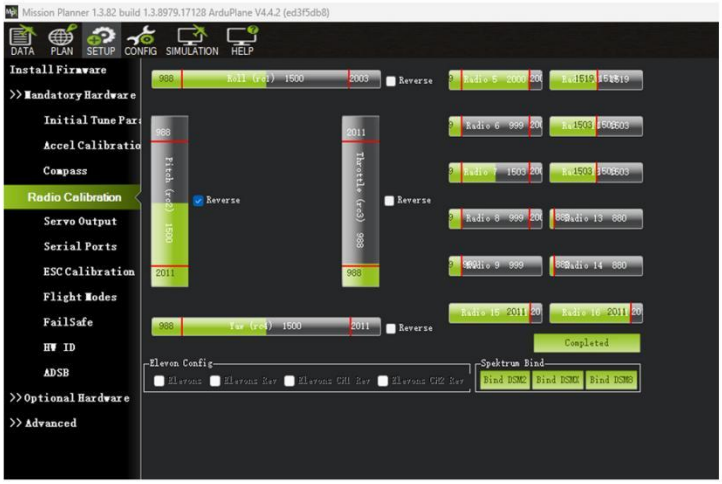
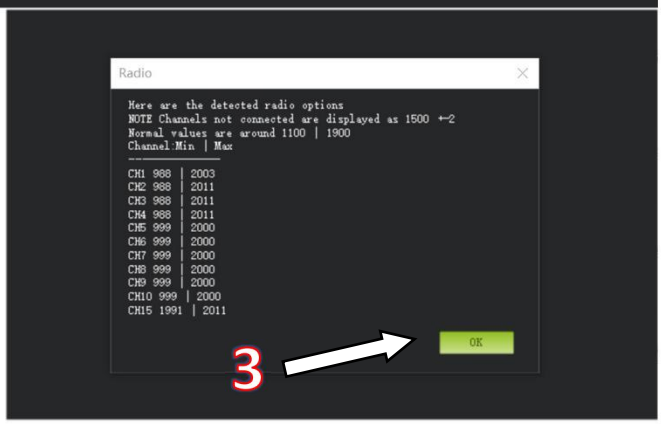
After clicking "Calibration Radio" and move all sticks and toggle switches through their full range of motion to allow the flight controller to recognize the maximum input signals from your radio.



On the mission planner the moving red lines indicate that flight controller is detecting and responding to the output signals from your radio.

1. Click ‘complete’
2. Click ‘OK’ and proceed to next step
3. Click ‘OK’

Flight controller will record the current signals as the maximum operational range of the radio.



Radio Calibration completed

Flight controller setup completed, click ‘disconnect’, remove USB cable.

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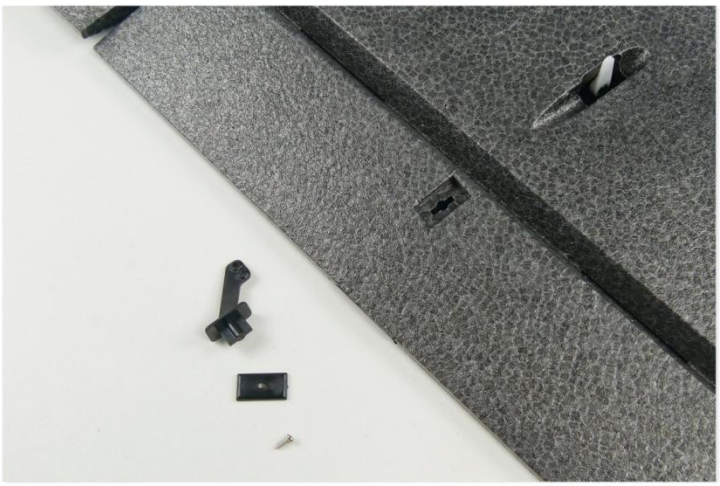
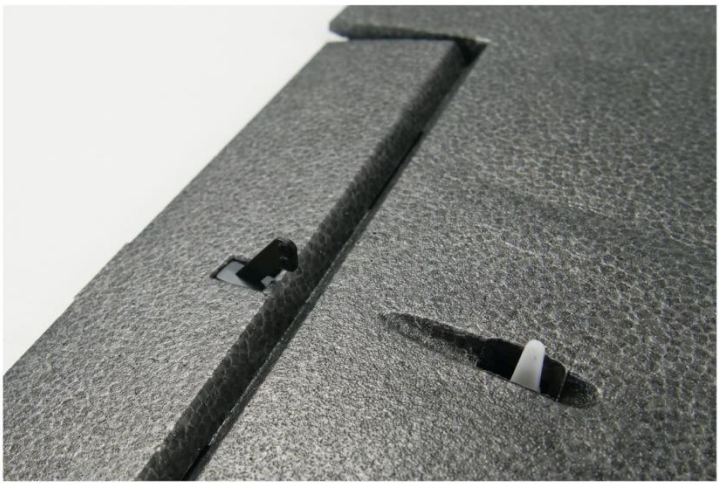
3.Aircraft Assemebly

Servo Horn, Linkage Rod and Horn Chuck Assemebly

Note: Screws are PA2*6 including in screws bags.



Install horn chuck onto wing.



Install it into wing hole.

On the reverse side, install the horn buckle and secure with PA2*6 screws.

Tighten with screws until snug.

Note: Avoid over-torquing to prevent thread stripping.

Install the horn chuck onto Horizontal tail as the same way as aileron.

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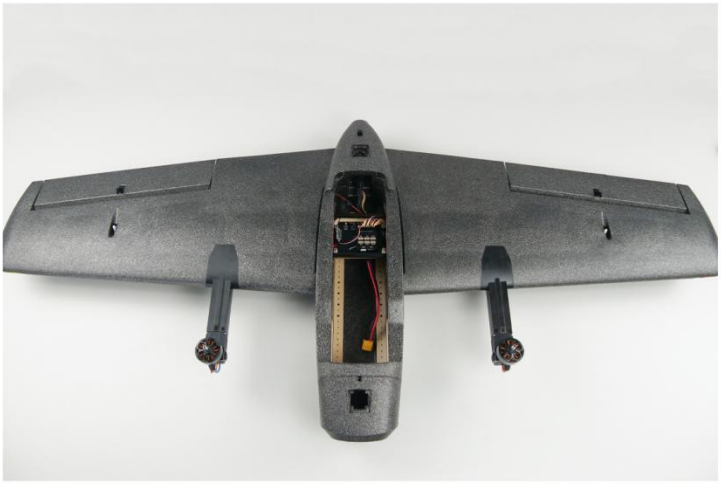
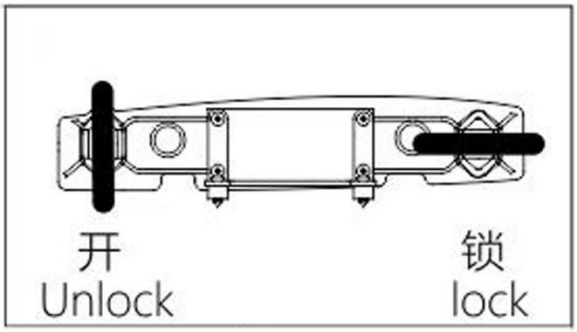
3.Aircraft Assemebly

Insert carbon rod into the round role in fuselage.



Insert wing into carbon rod to assmebly it on fuselage, until it clicks into place.

Note: Don’t assmebly or disassembly wing while powered on, otherwise the electronics may be damaged.



Rotate wing lock knob 90°, as shown on right picture.

Note: Ensure the wing is fully inserted before rotating the knob.

Insert tail boom into fuselage.

Insert Horizontal tail into tail boom.

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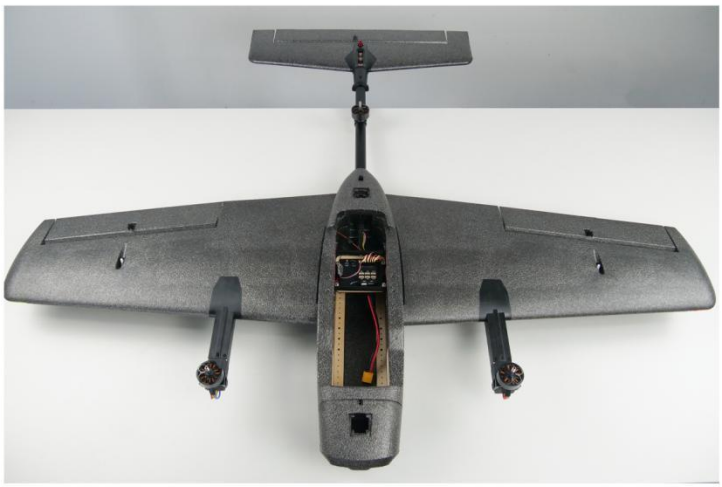
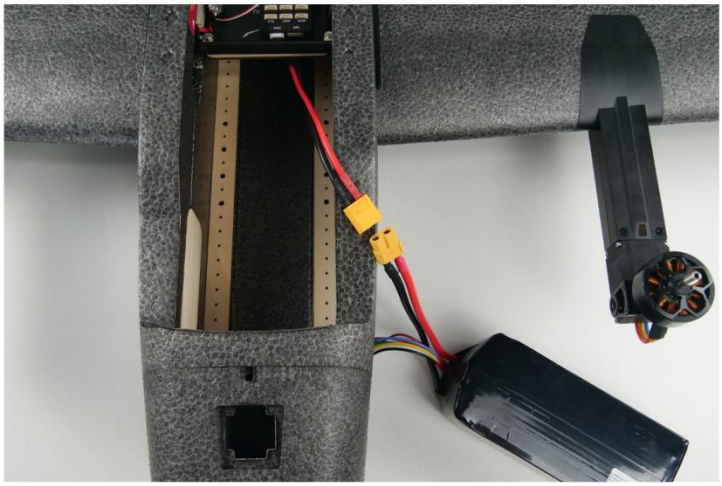
3.Aircraft Assemebly

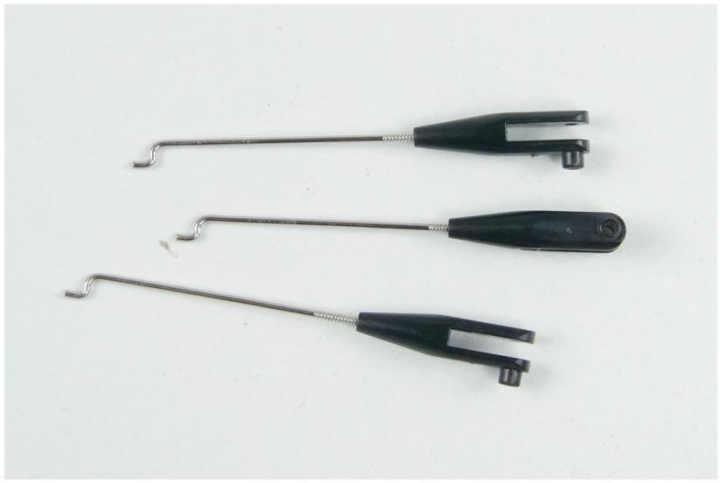


The main aircraft assembly completes.

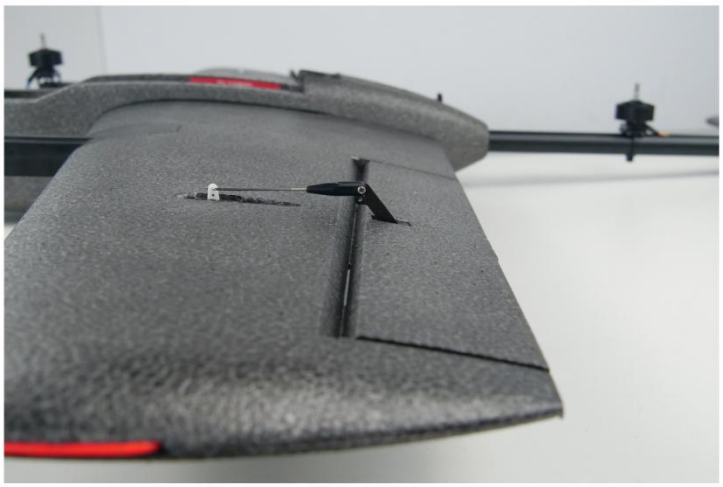
Turn on the radio.



Power on aircraft, ensure radio connects to aircraft successfully.



Thread linkage rod into servo horn, adjusting to a total length of 75mm.



Use M2*8 half-thread screw to secrue link rod and servo horn.

Note: Do not over-torquie the M2*8 screw, as this may restrict servo horn movement and cause operational failure.

The servo horns on both ailerons must be installed. After installation, ensure the control surfaces are flush with the wing.

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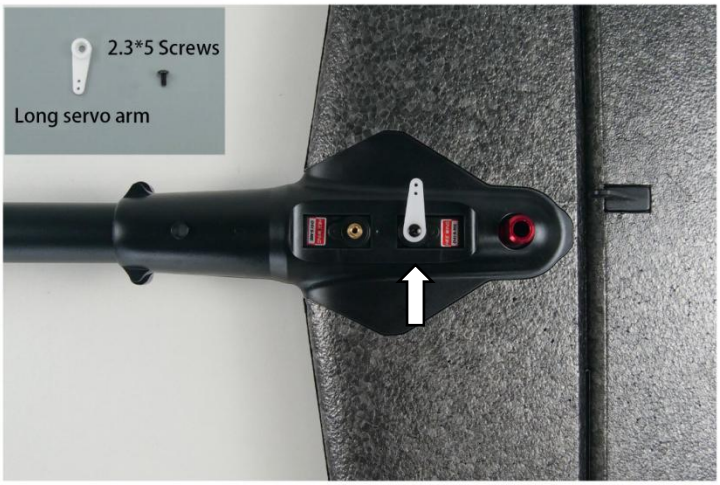
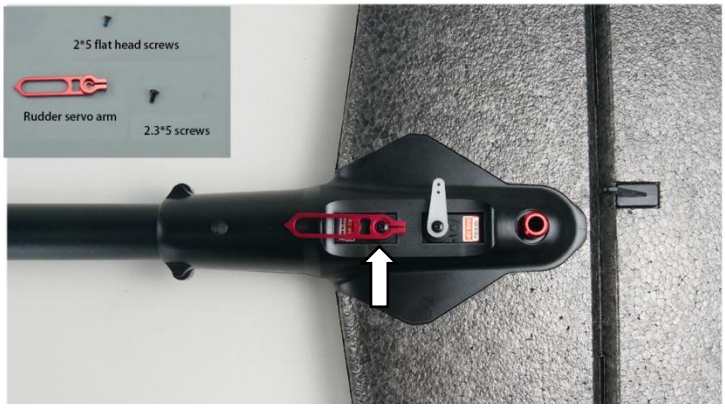
3.Aircraft Assemebly



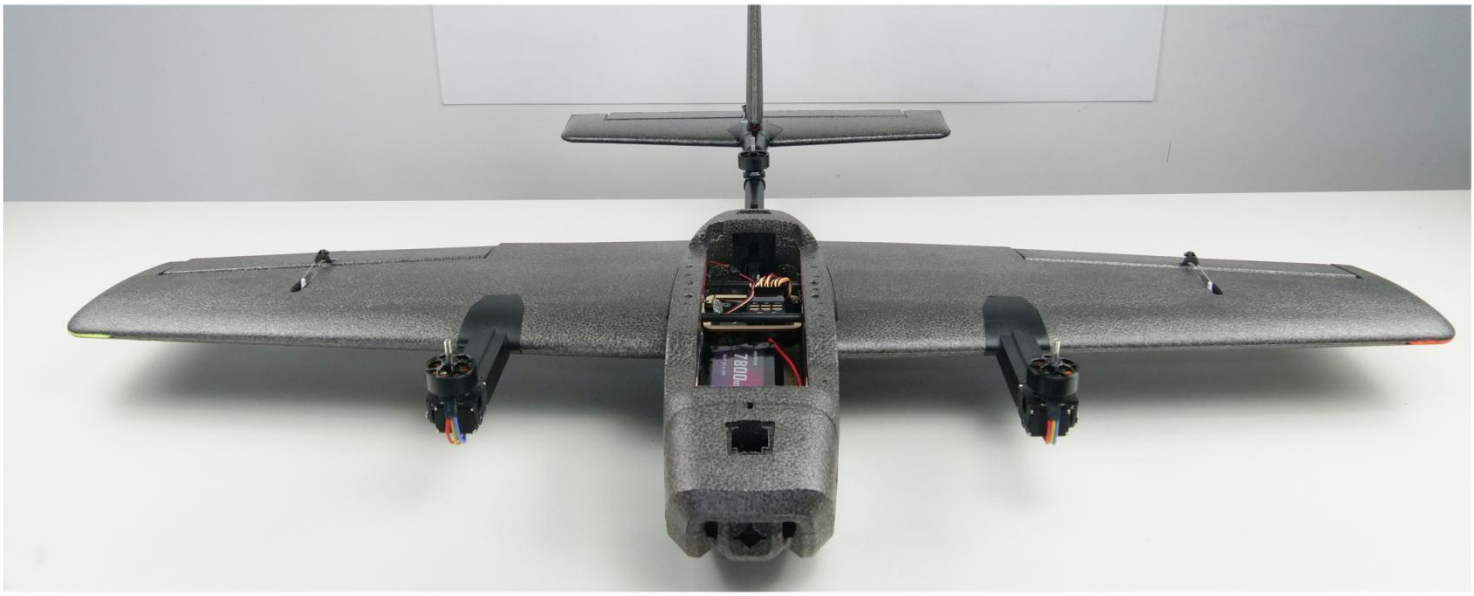
Take the long servo arm and 2.3*5 screws from the Horns Accessories bag. Install the arm vertically.



Take rudder servo arm, 2.3*5 screws and 2*5 flat head screws from Horn Accessories Bag.
Align the arm with the forward marking, then secure using the 2.5 countersunk screw on the side and the 2.3*5 screw on top.

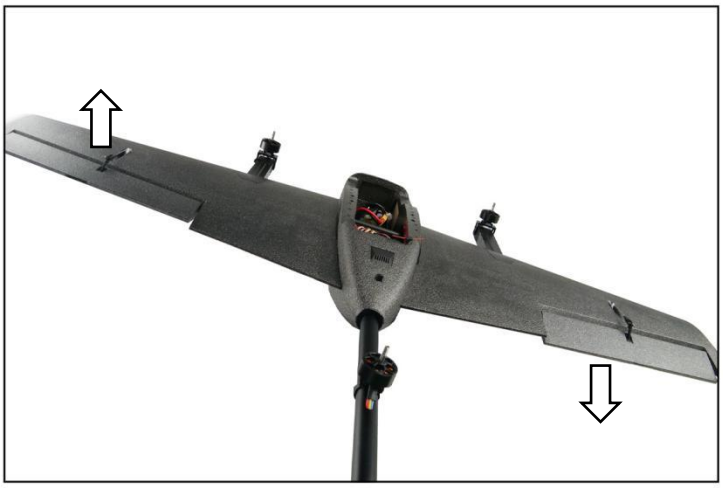
Use M2*8 half-thread screw to secrue link rod and servo horn. Note: Do not over-torquie the M2*8 screw.

Install the vertical tail and secure its tab inside the metal arm.

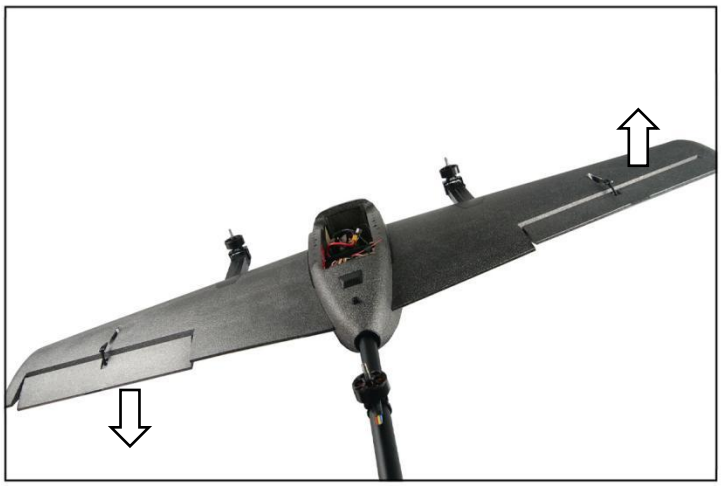


Servo horn and horn linkage installation completed.

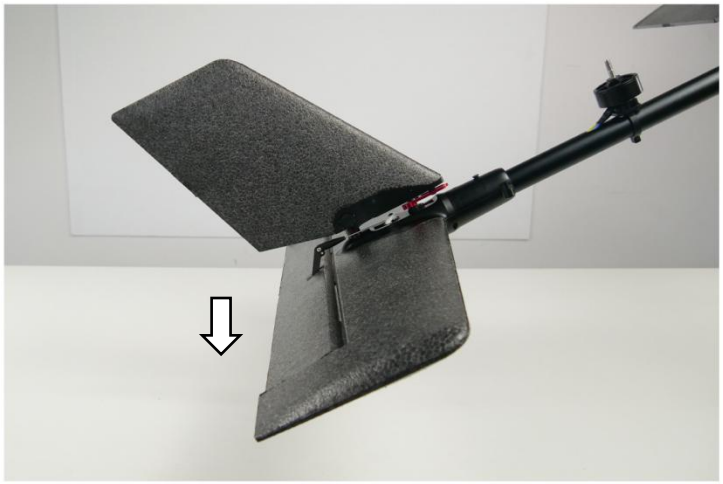
3.Aircraft Assemebly



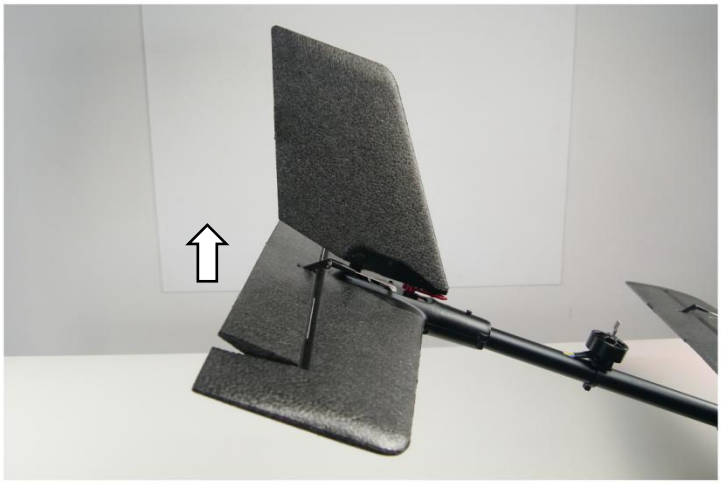
Lift the aircraft as shown (left wing up, right wing down) the left aileron control surface should deflect upward, while the right aileron deflects downward.



Lift the aircraft as shown (left wing down, right wing up) the left aileron control surface should deflect downward, while the right aileron deflects upward.



As shown, lift the nose, the horziontal tail control surface should be downward when the horziontal tail down.



As shown, lower the nose, the horziontal tail control surface should be upward when the

Aileron stick left

The left aileron should be upward, the right aileron should be downward.

3.Aircraft Assemebly

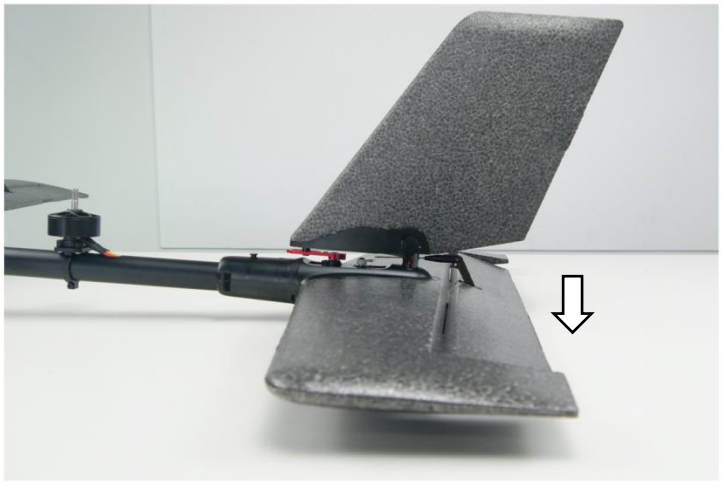
Aileron stick right

The left aileron should be downward, the right aileron should be upward.

Elevator stick down

The horziontal tail control surface should be upward.

Elevator stick up



The horziontal tail control surface should be downward.

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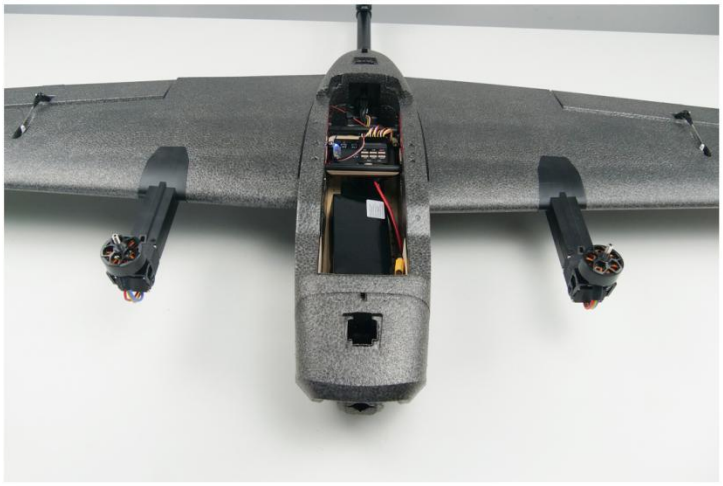
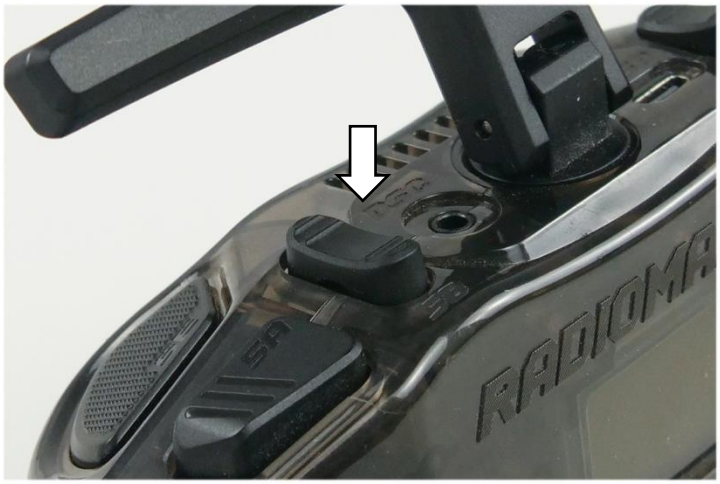
3.Aircraft Assemebly

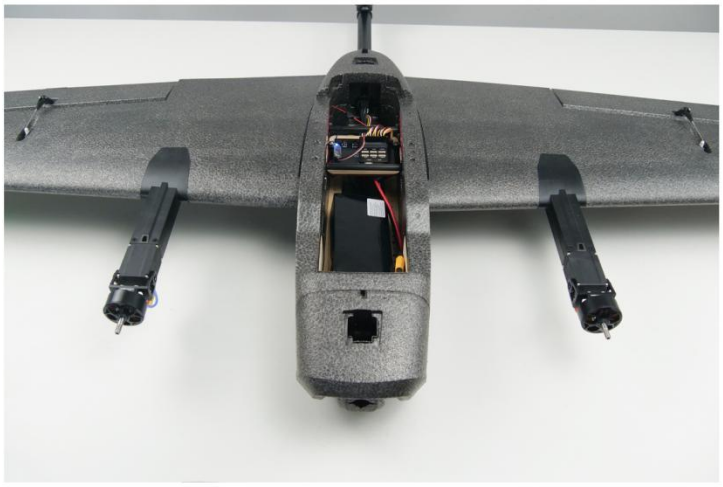
When Channel 6 is in Position 1
(as shown in the picture)



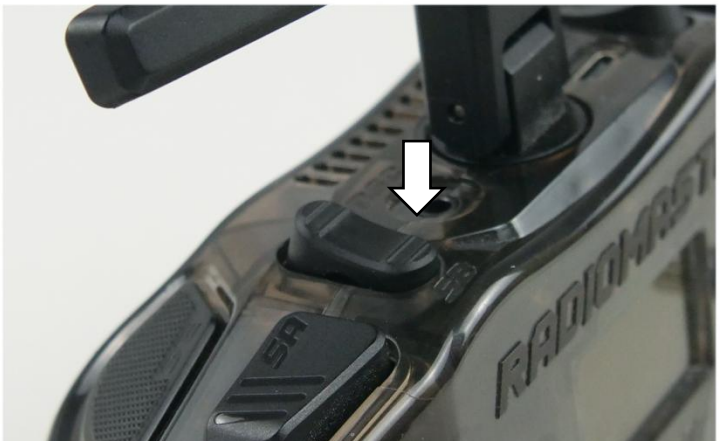
When wing motors vertically, the aircraft is in QLOITER mode.



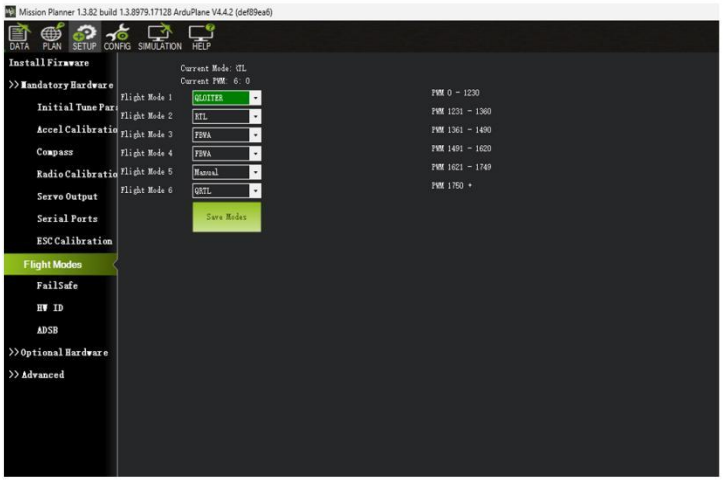
When Channel 6 is in Position 2
(as shown in the picture)



When wing motors horizontally, the aircraft is in FBWA mode.



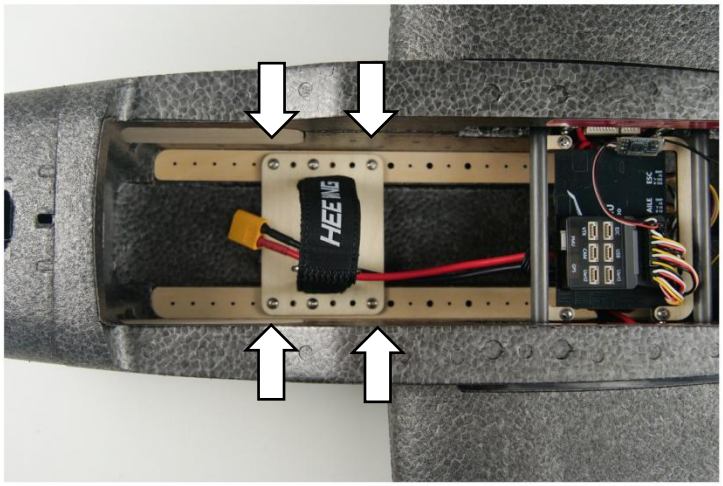
When Channel 6 is in Position 3 (as shown in the picture)
In QRTL mode, the aircraft will autonomously return when unobstructed and free from interference.
Must be activated in open areas.



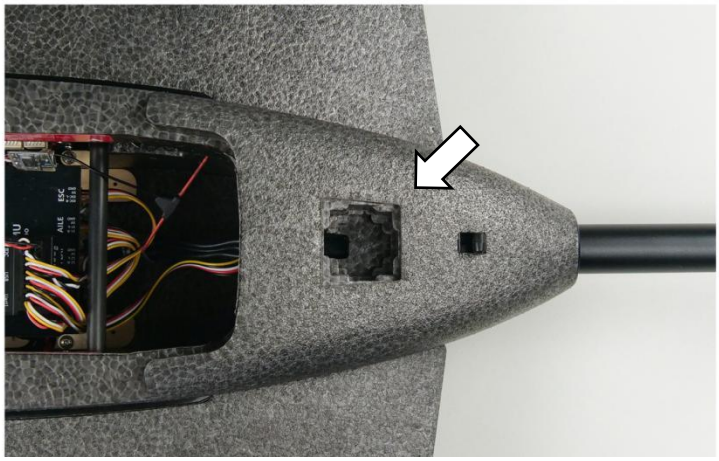
Flight modes can be configured by Mission planner
Access path: Setup → Flight Modes
Reference modes:
VTOL: QLOITER; Fixed-wing: FBWA; Return-to-Home: QRTL

3.Aircraft Assemebly

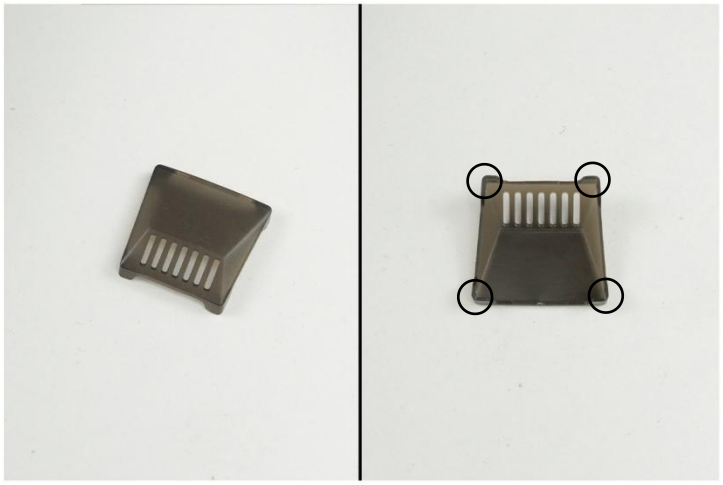
Install Battery velcro into Battery fixing plate, as shown picture.



Secrue plate into Battery fixing rails with PWA2.5*8 screws



The rear fuselage port can be equipped with a cooling fan. However, installing a GPS here is not recommended, as it may block heat dissipation and cause GPS interference.



Install GPS Hatch over on rear fuselage
Apply foam glue at the circled area for fixation

Install hatch cover handle into hatch over.

On the reverse side, secrue handle with hatch over lock.
Note: lock orientation—flat side must face outward.

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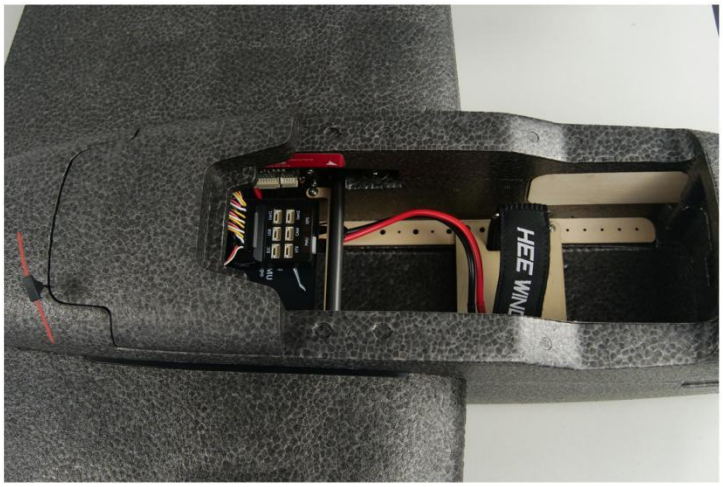
3.Aircraft Assemebly

There are two position can install GPS, one is installed on rear hatch cover, as shown picture.
Secrue it with tape or glue.
Note: Apply a little foam glue along all four edges.

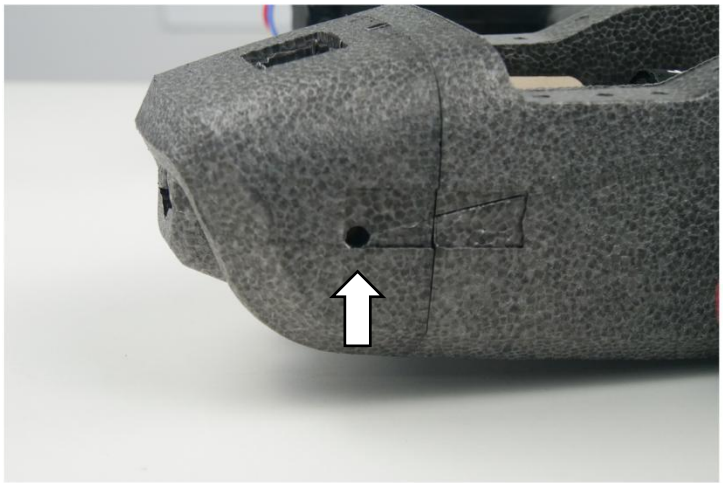
Other is installed on nose, as shown picture.
Note: Apply a little foam glue along all four edges.

After installing GPS, the other end connector connect to flight controller.



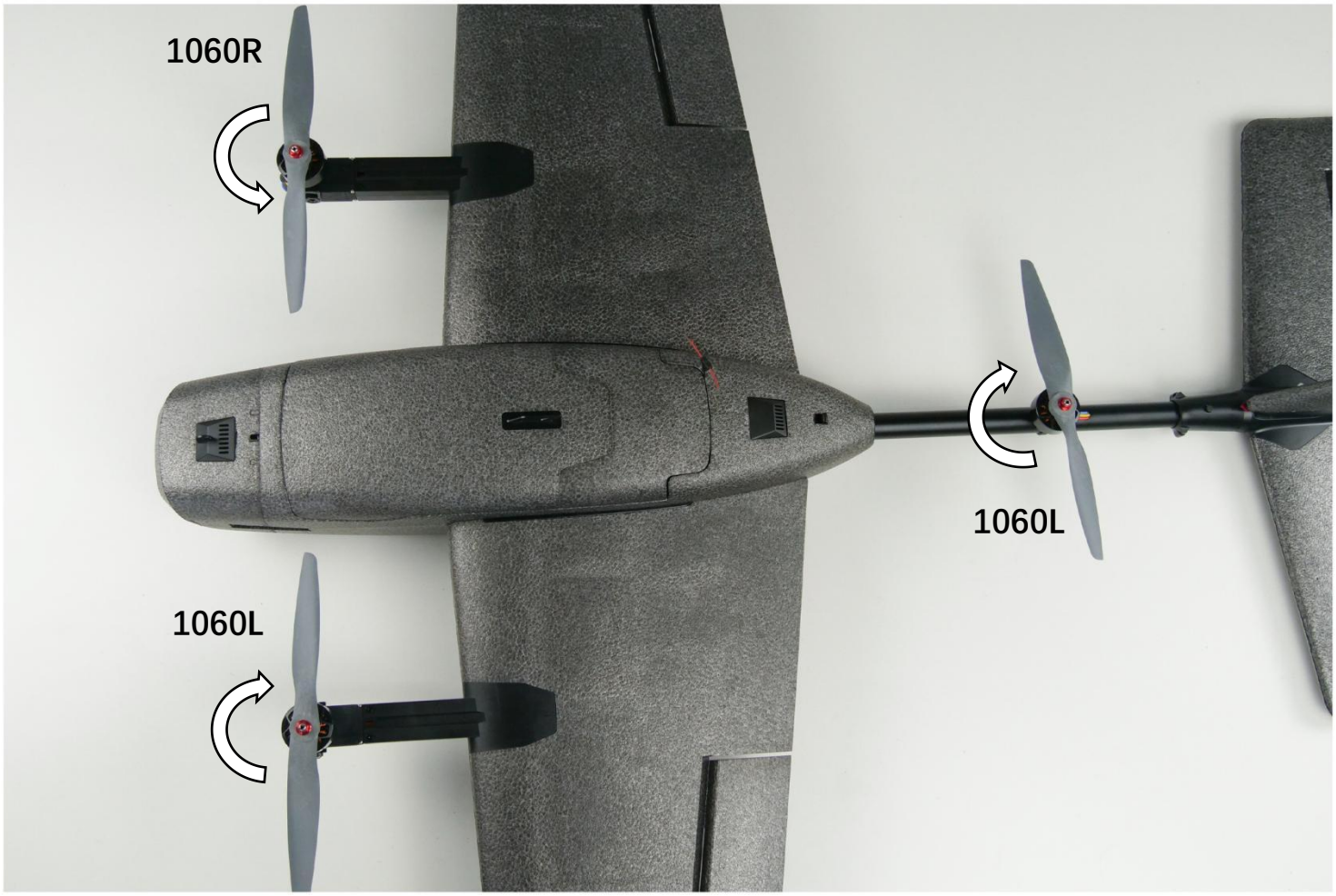
Install rear hatch over first, clear the cables to ensure not cables are covering the carbon rod.

Install front hatch cover, then press hatch cover handle and clip carbon rod.



Secrue nose with PWA 2.6*8 screws

3.Aircraft Assemebly



Install the propellers by securing it to the motor with locking nut, ensuring the side with the lettering faces upward.

Note: the allocation of the propeller's rotation direction. The propellers should be installed according to the direction of the motor.

T2 Fuselage Landing skid.

Apply it into the recessed groove on the bottom of the fuselage.

Aircraft Assembly is completed.

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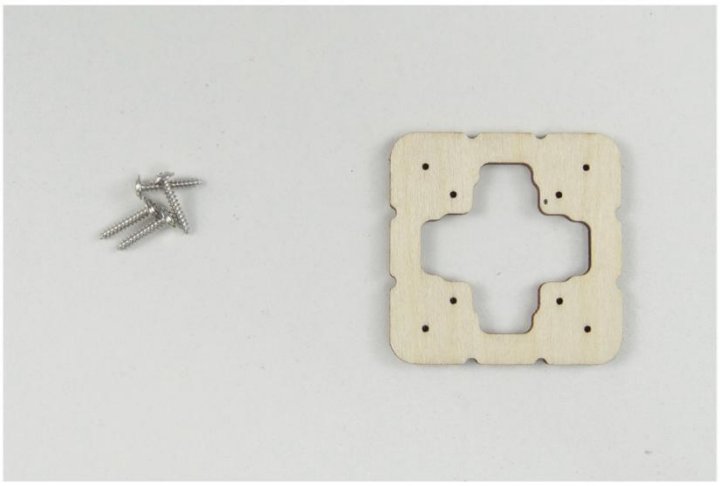
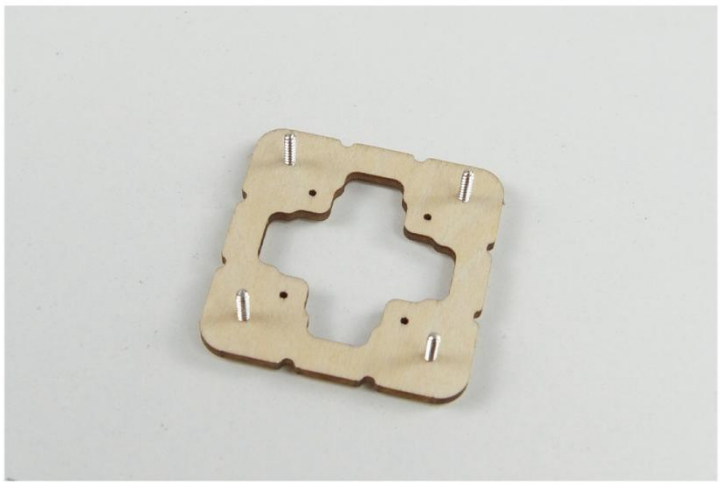
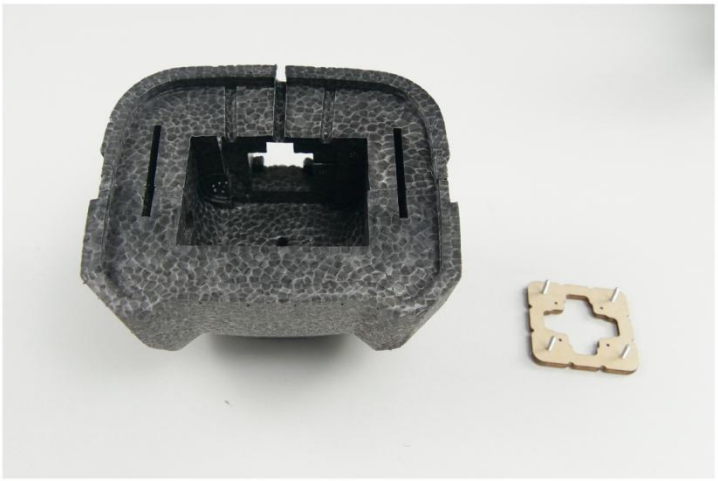
4.Extended Accessories Usage Instructions



PWA2*12 Screws, Equipment fixing plate.



Install PWA2*12 screws into equipment fixing plate.



Install the plate into nose.

Install VTXs or Fans onto plate.

Flap Decals

Apply the sticker over the flap opening (When flaps are not installed) to prevent airflow-induced vibration of the flap control surface during flight.

T2 VTOL PNP With FC Assembly Guide

Precautions

WARNING: Before operating, adjusting, or flying this model, carefully read this manual and follow all precautions, limitations, and recommendations provided. Improper use of this product may result in property damage, serious injury, or even death.

NOTICE! RC aircraft, including the HEEWING T2, need to have some operate experience or be guided by some one with more experience. When operating, always prioritize your personal safety, the safety of others, and the safety of the surrounding environment. The manufacturer and distributor cannot be held responsible for accidents caused by improper assembly, abnormal wear and tear of components, or user negligence. This product is intended only for adults with prior fixed-wing model experience or those under the direct supervision of a skilled operator. It must be flown exclusively at legally permitted RC airfields to ensure safe operation. Once sold, the company assumes no liability for any performance, control, or safety-related issues arising from the use of this product.

Important Notices

-Age Restriction: This model aircraft is intended for users aged 14 years or above.

-Flight Location: Operate only in designated areas permitted by local regulations. Do not fly in thunderstorms, strong winds, heavy snow, or other extreme weather conditions.

-Environmental Responsibility: Properly dispose of all waste (e.g., packaging, damaged parts) after flying. Do not litter or incinerate the model or its components.

-Safety Protocol: Before connecting the aircraft's power battery, ensure the throttle stick is at its lowest position and the remote controller is powered on.

-Recovery Procedure: Never attempt to catch the model mid-flight or during landing. Wait until it has fully landed before retrieval.

-Storage Warning: Avoid direct sunlight exposure for extended periods, as this may cause foam deformation, bubbling, or other damage.

5.Pre-Flight Preparation and Instructions

Before flying, conduct the following checks (including but not limited to): Ensure quick-release parts are properly installed; Verify linkage rod and connector are secure; Confirm flight controller wiring is correctly connected and not loose; Check GPS installation; Inspect propellers tightness; Check radio and battery charge levels, etc.

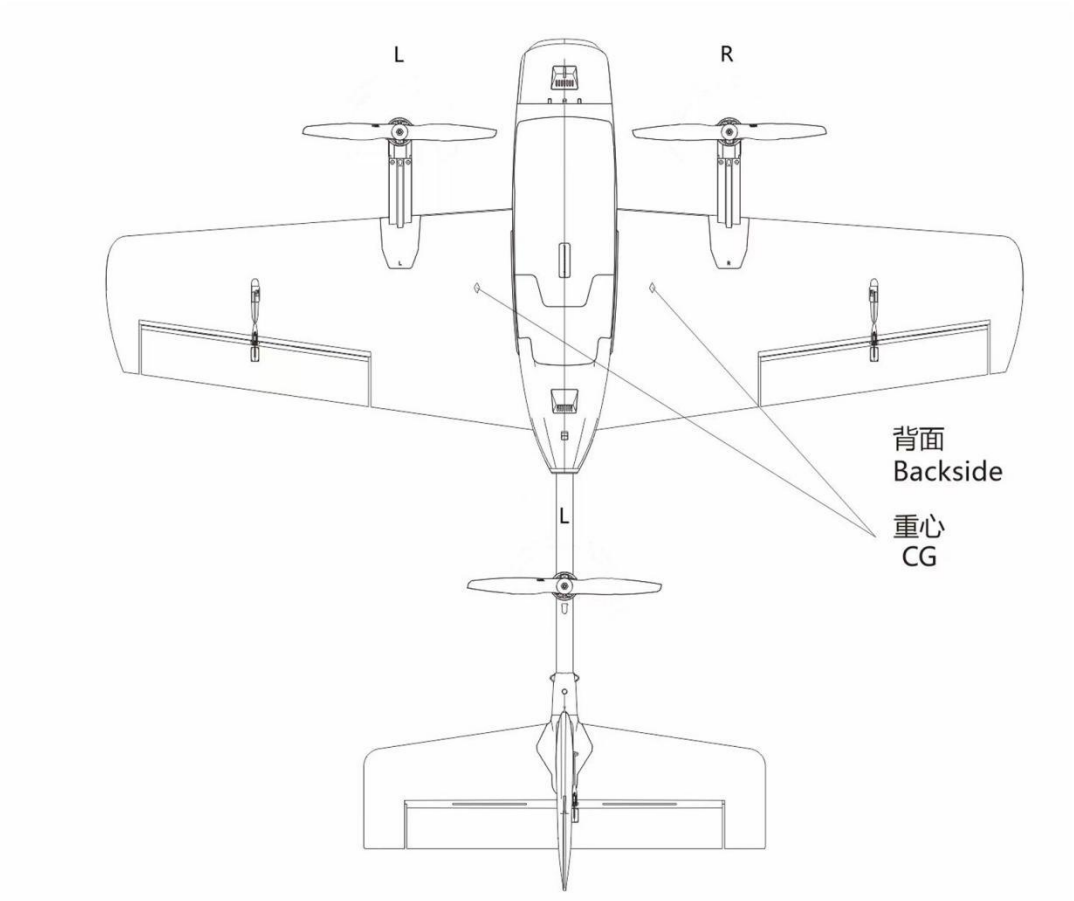
Only proceed with flight operations after confirming the aircraft is fully functional and fault-free to prevent unnecessary damage or loss.

T2 VTOL PNP With FC Assembly Guide

5.Pre-Flight Preparation and Instructions

Turn on Radio.
Take Pocket as an example: The green light on confirms it's in ready-to-connect status.

Secure the battery properly.

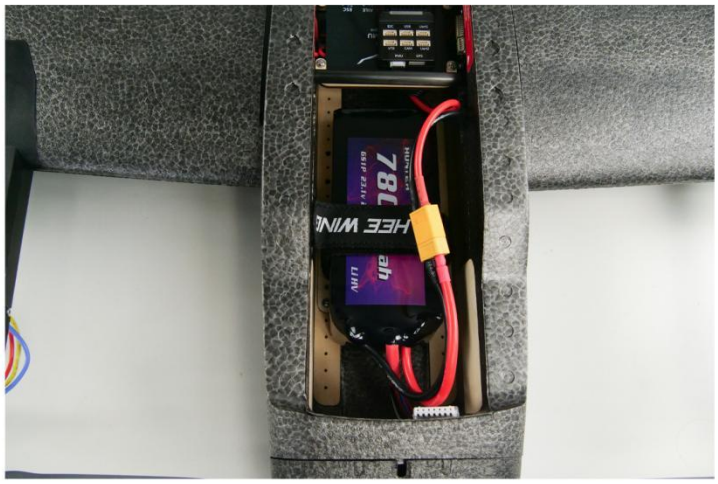


The aircraft's center of gravity (CG) is located at the "◆" diamond mark beneath the wing.

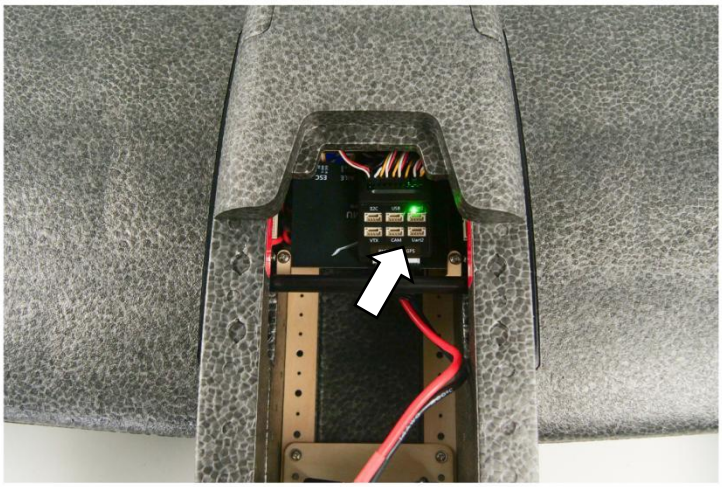
Adjust the battery position to balance the CG.

T2 VTOL PNP With FC Assembly Guide

5.Pre-Flight Preparation and Instructions



Powering on aircraft, wait for the flight controller to complete its self-inspection.
Do not touch or move aircraft during this process.



After the self-inspection completes, wait briefly until the flight controller's green LED light on, indicating successful GPS satellites searching completed.

After GPS satellites searching completes, before flying, please verify all control surface directions are correct. (refer to pages 13-15)
Ensure connection, flight controller stabilization, radio response, and flight mode switching are all working with on problem before flying.

Arming: Hold the left stick in the bottom-right corner for 5 seconds until the flight controller's LED red light on, indicating successful arming. In VTOL mode, motors will idle after arming.
Important Note: Ensure all trims are centered before arming, otherwise arming may failed

Disarming: Hold the left stick in the bottom-let corner for 5 seconds until the flight controller's LED red light flash.

Flight Mode Instructions Video Refer to