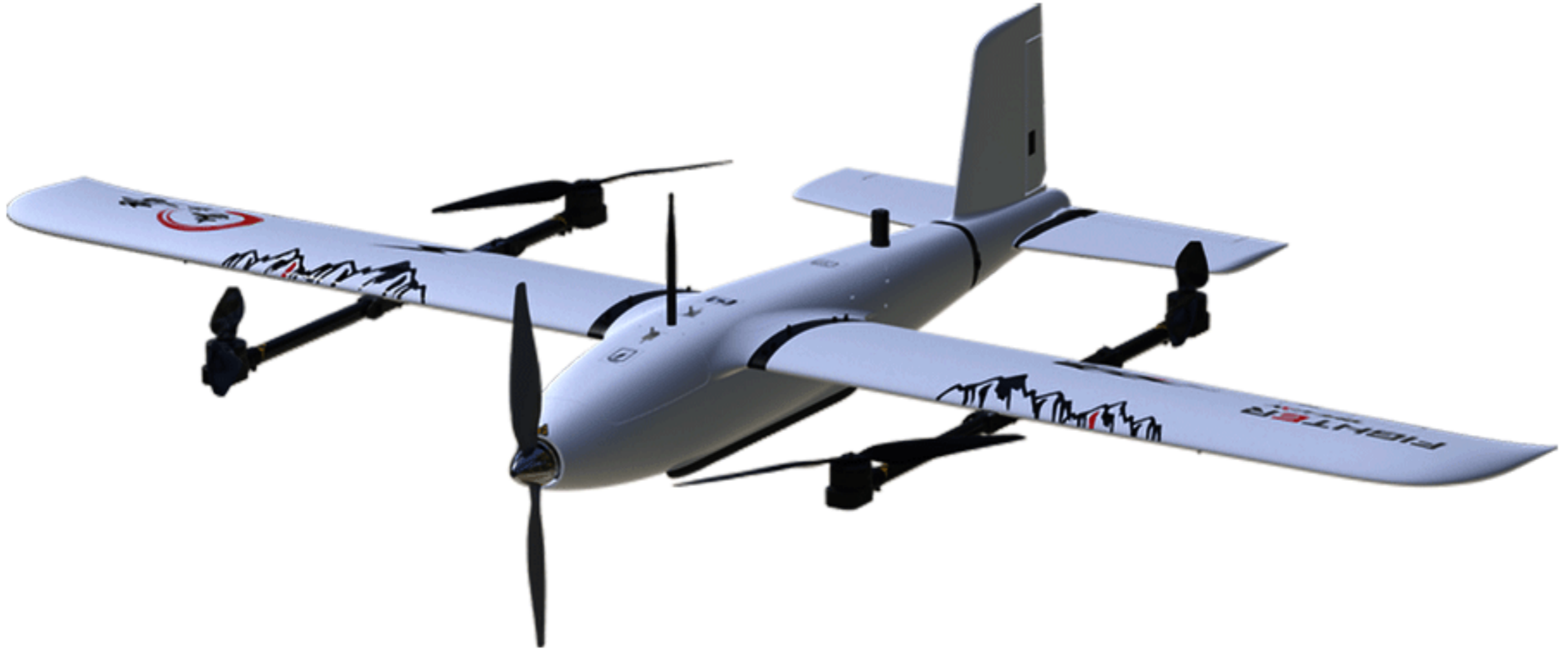


Overview Description

Fighter is a 10kg level VTOL fixed-wing carrier aircraft which was optimized repeatedly for two years and iterated 5 versions by the MFE Team



Basic Parameters

Material: EPO,EVA,carbon fiber,PC,engineering plastics and etc.

Wing Span: 2430mm

Fuselage height: 180mm

Fuselage length: 1450mm

Wing area: 72.5dm²

Suggested flight speed: 17~20m/s

Stalling speed: 10m/s

Maximum payload: 1.5Kg

Payload cabin size: 280*160*110mm

Longest flight range: >150km (600g load)

Max take-off weight:11.5kg

Practical ceiling height: 4000m

Wind resistance: 5

Take-off and landing approach: VTOL

Dismounting way: tool-free

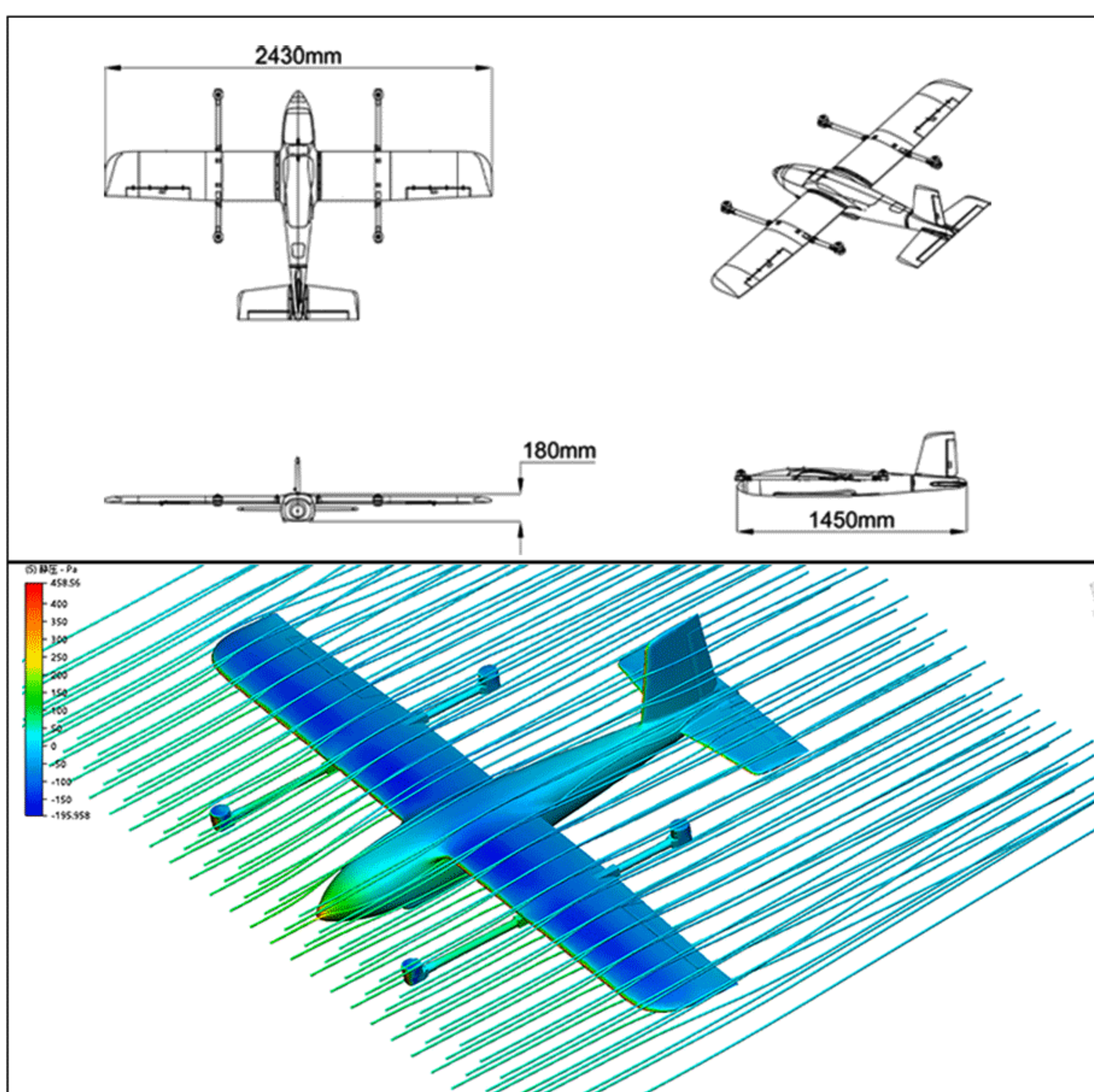
Transport case size: 1.25m×0.34m×0.49m

Range 1: 120min/137km(speed 19m/s load 600g,battery 2pcs 6S 16000mah in series,take-off weight 10KG,altitude 500m)

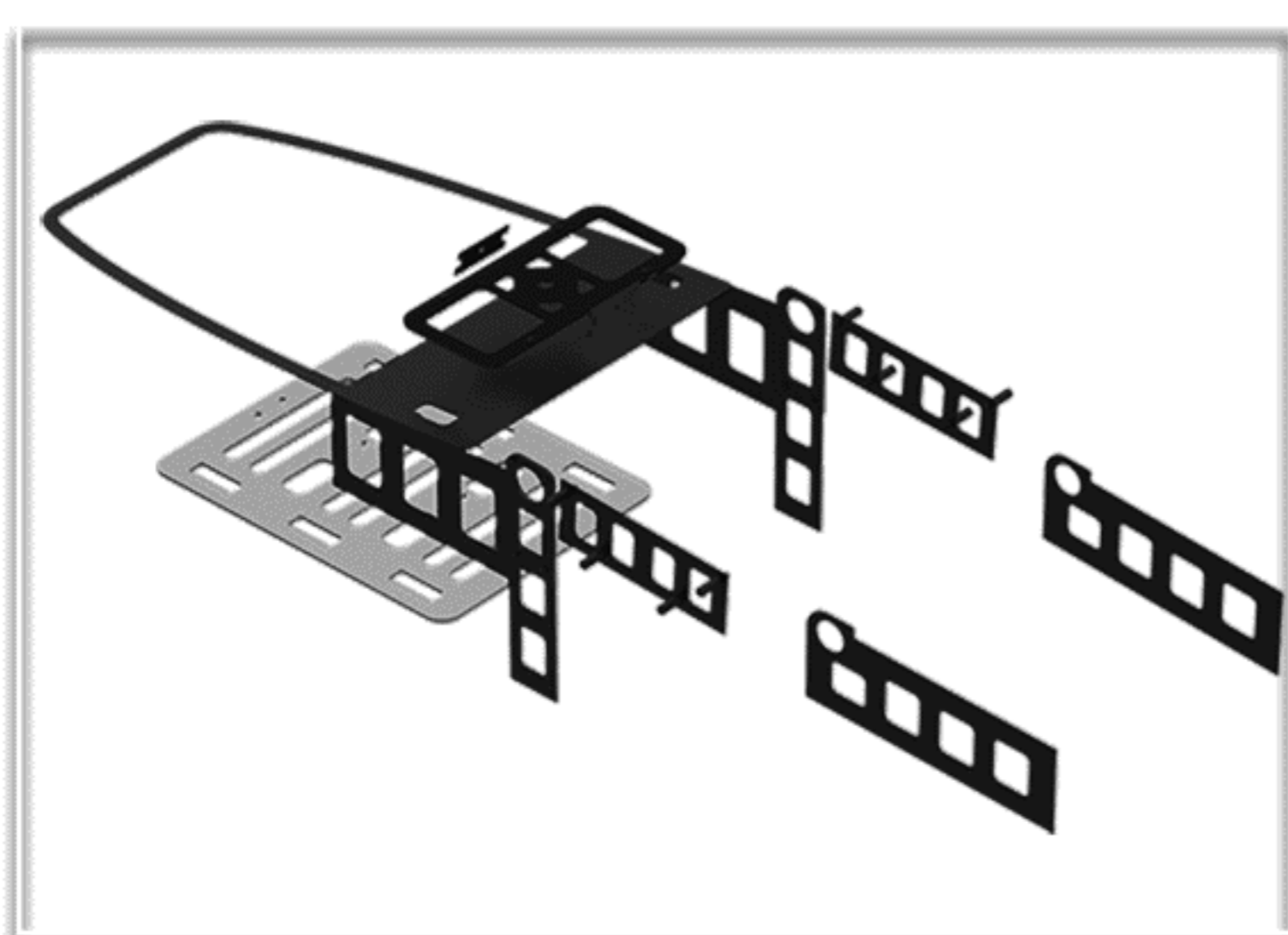
Range 2: 134min/155km(speed 19m/s,load 600g,battery 2pcs 6S 22000mah in series,take-off weight 11.2KG,altitude 500m)

Efficient Aerodynamics

On the basis of the conventional inverted T layout, the Fighter have optimized the aerodynamic figure and relative positions of the wings, horizontal tail, vertical tail, and fuselage

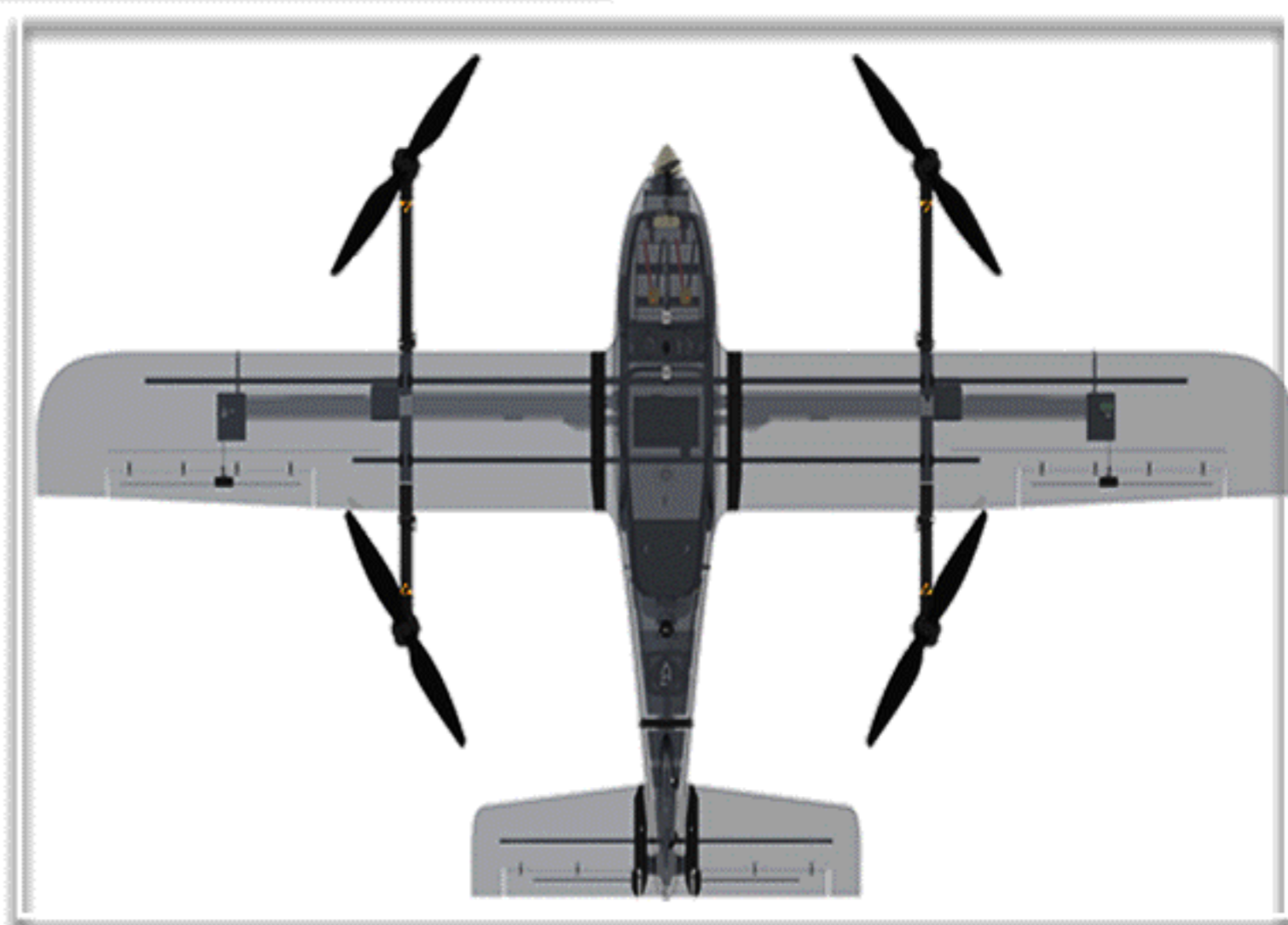


Light but Stable



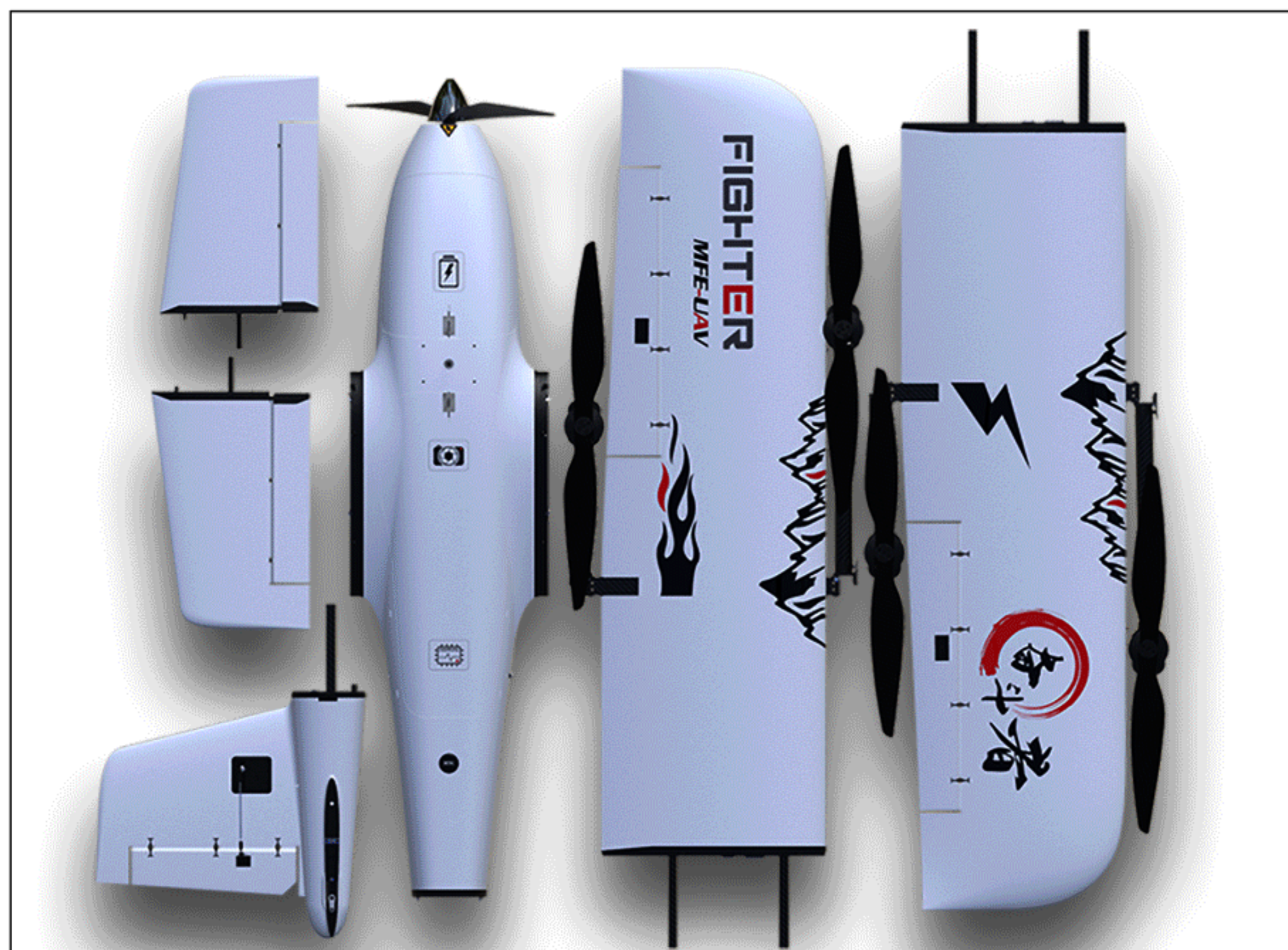
A large number of high-strength light PC boards are used in materials, and a large number of embedded box structures are used in figure to improve the structural strength and rigidity of the body in many ways

Based on the "Overload Test", according to the structure and load characteristics of the wing, tail and fuselage, the structure was optimized as "g" precision to minimize unnecessary weight



Disassembly Quickly

The wing and tail adopt a toolless quick-release structure, which reduces the installation steps and shortens the disassembly and assembly time

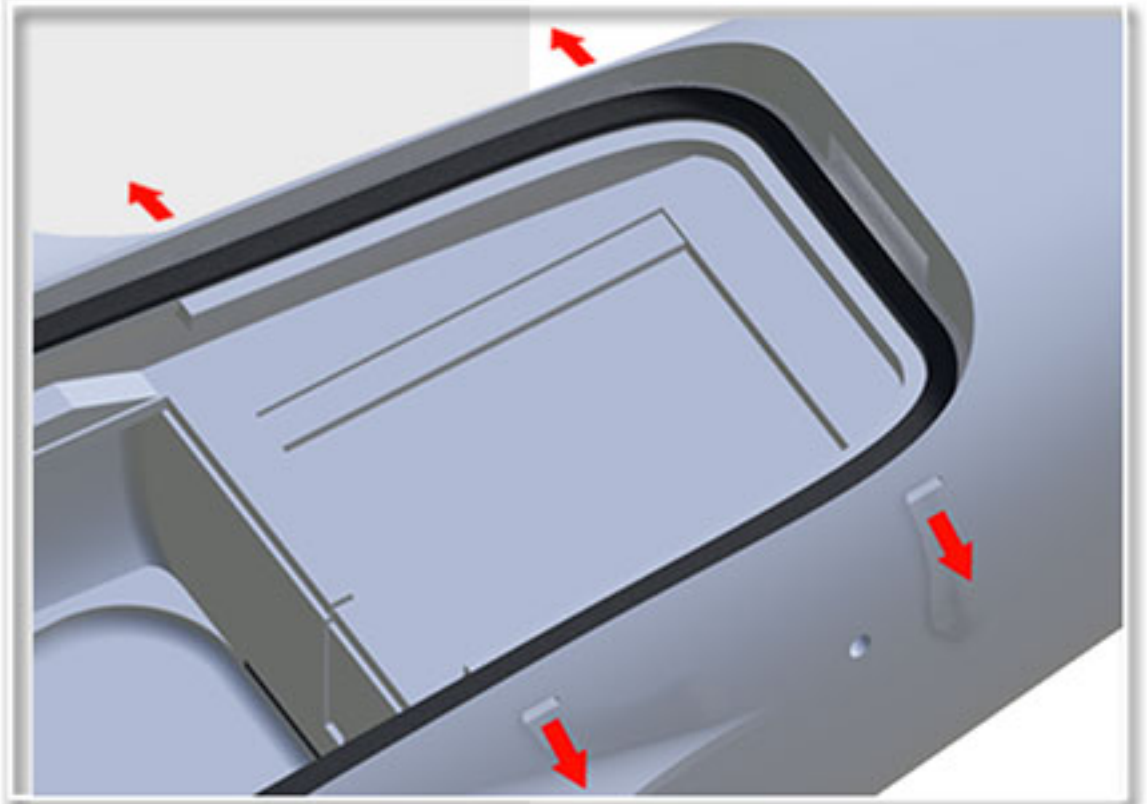


IPX3 Waterproof Level



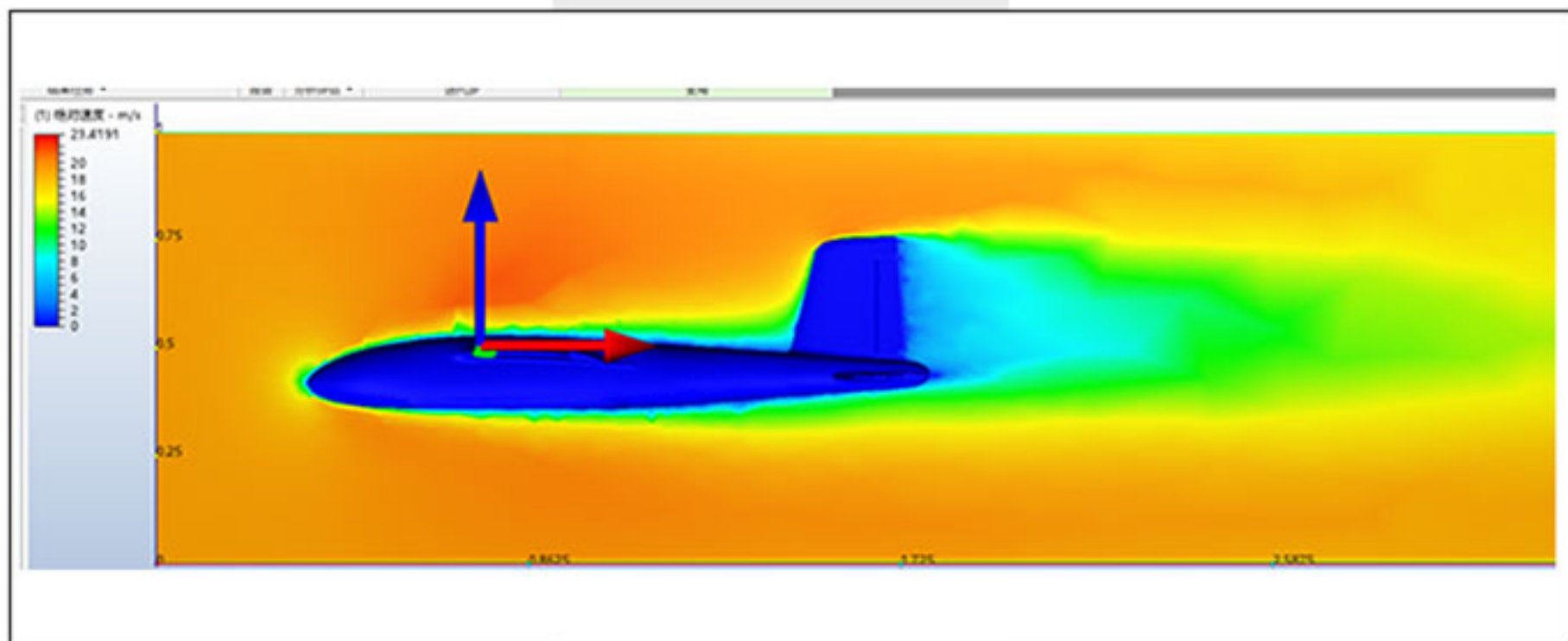
The head cabin cover adopts an integral umbrella structure to prevent rainwater from entering the cabin

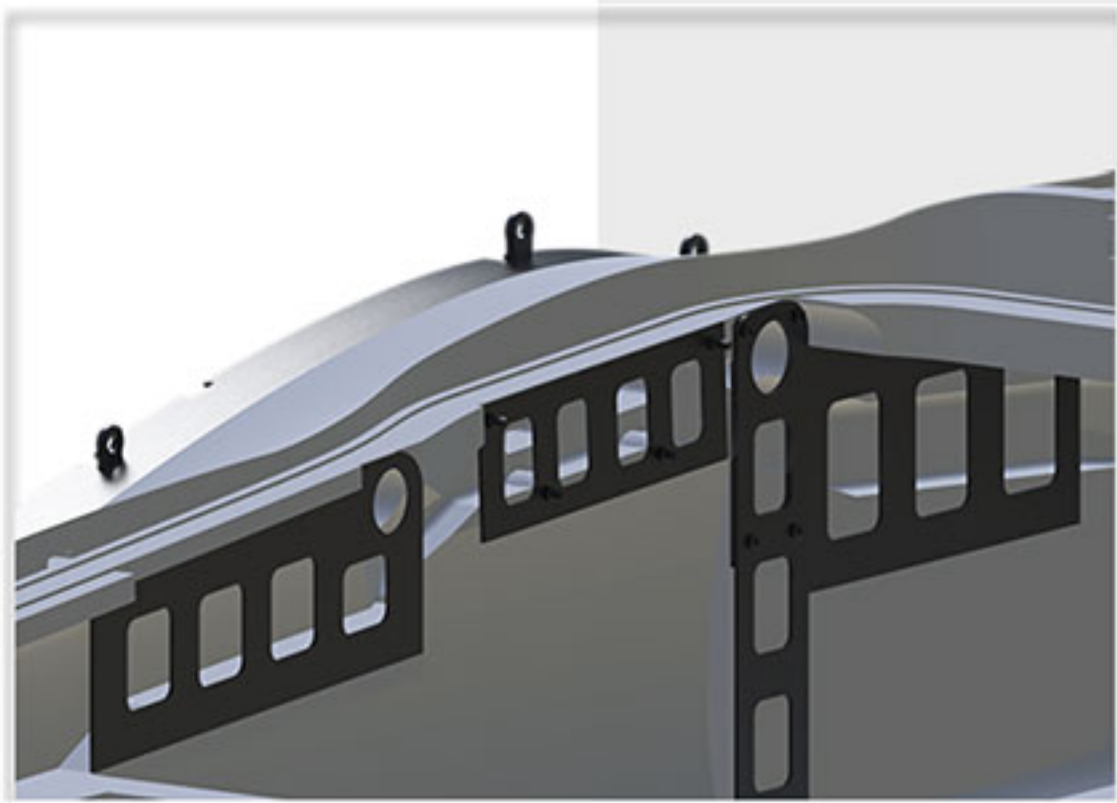
The fuselage cabin cover is specially designed with a water channel and a water outlet to ensure that the aircraft has normal flight capabilities in little rain



Large Fuselage Cabin, Low Resistance

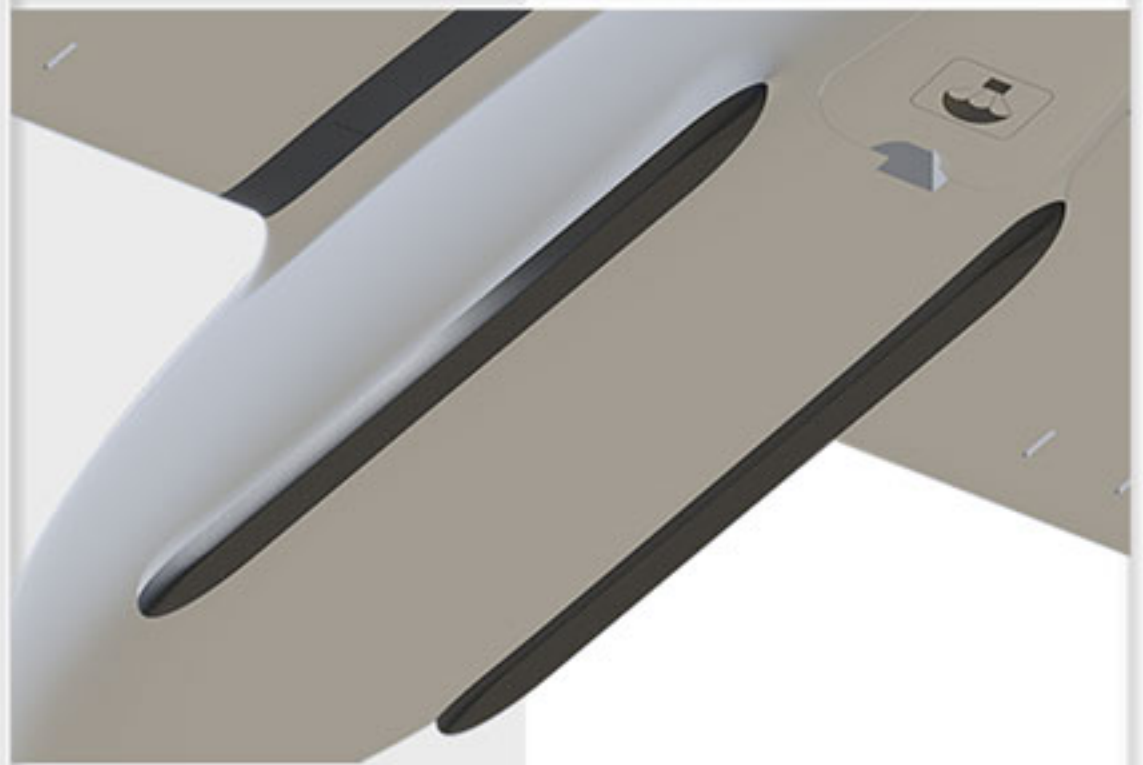
The fuselage adopts the overall streamline figure, and the flight resistance is reduced as much as possible while ensuring a large space

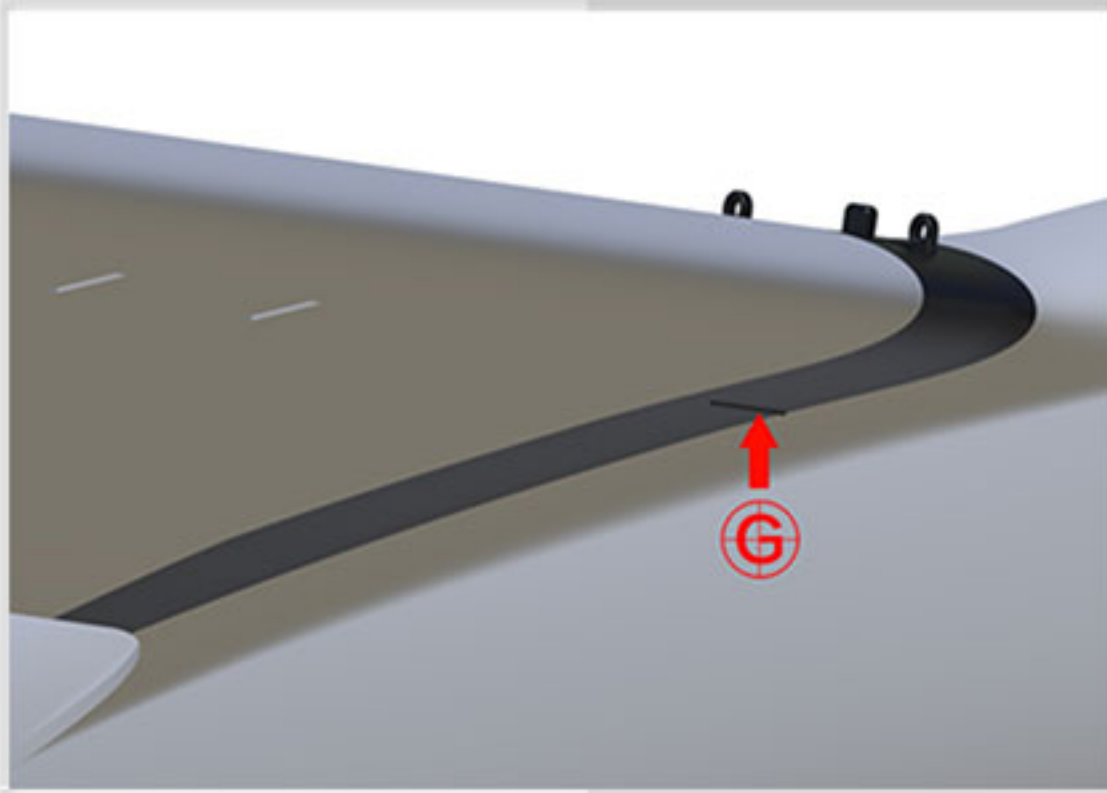




The inside of the fuselage is equipped with a wire groove and a removable baffle, which is matched with nylon braided sleeves to ensure simple and efficient wiring in the cabin

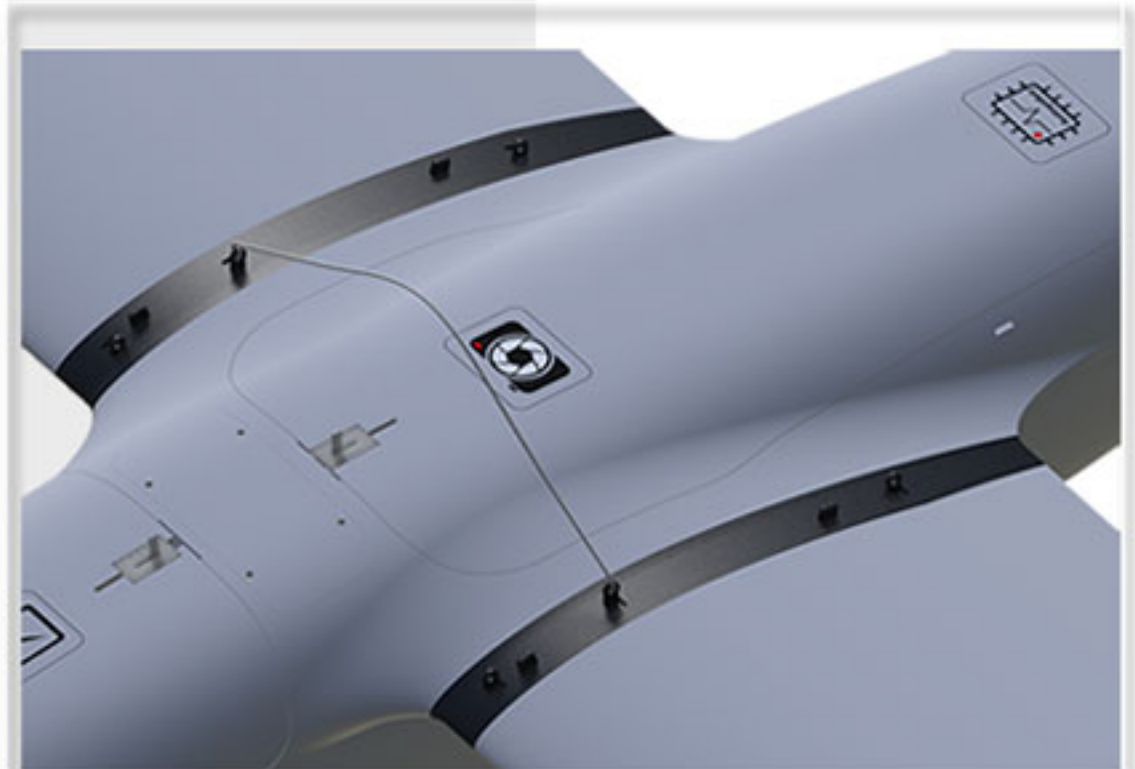
Streamlined EVA cushions are designed on both sides of the bottom of the fuselage, which does not block the camera hole, shock absorption and wear resistance, and improve the aircraft's course stability



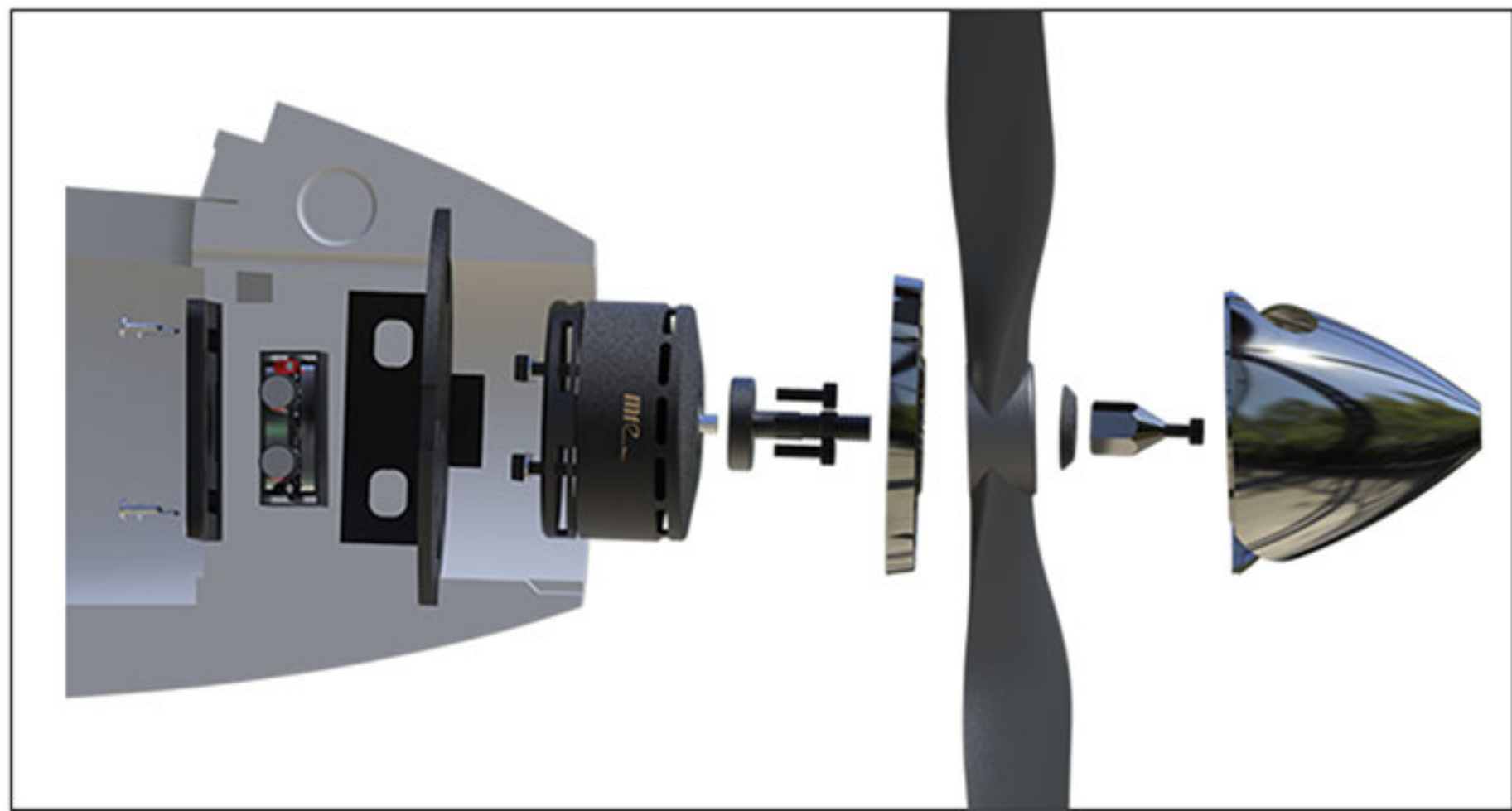


The center of gravity of the aircraft is under the raised position of fuselage hook and the wing root plastic (same position)

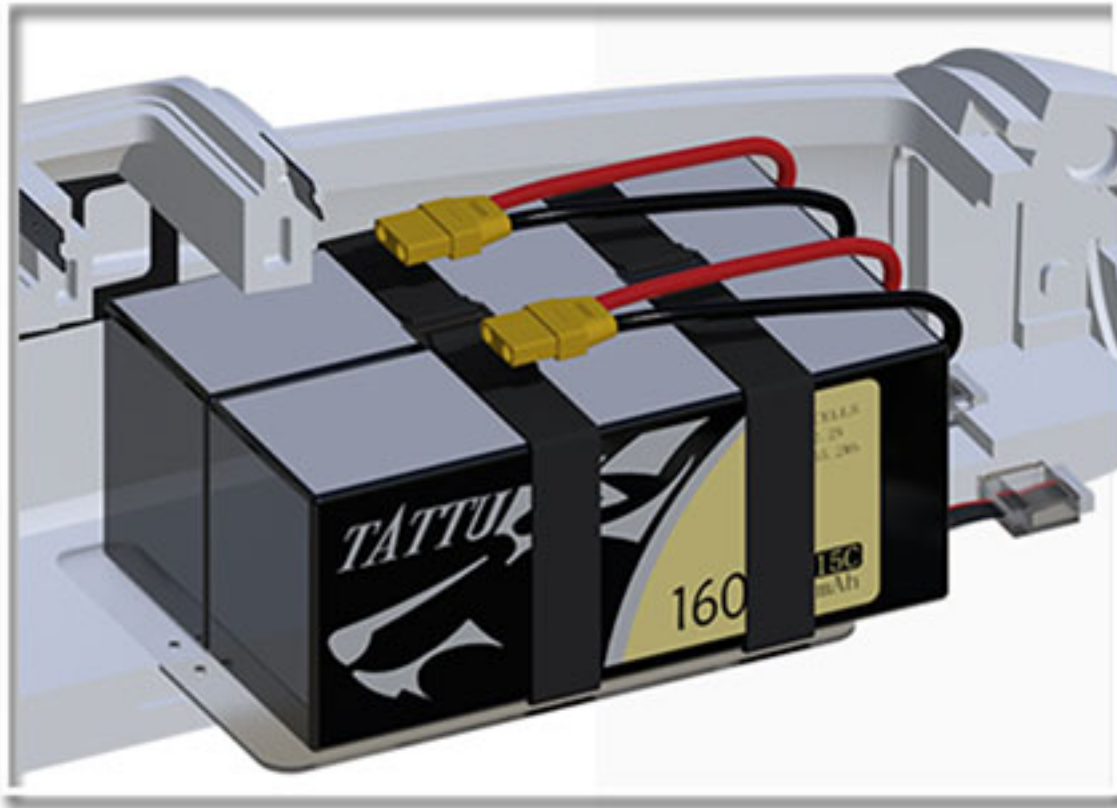
The center of gravity of the hand-held lanyard during heavy load, and the center of gravity of the hand-lifted wing during light load



cabin supports a maximum installation size of 80 × 45 × 68mm. With large-size and large-pitch propellers, the front-pull power conversion efficiency is high



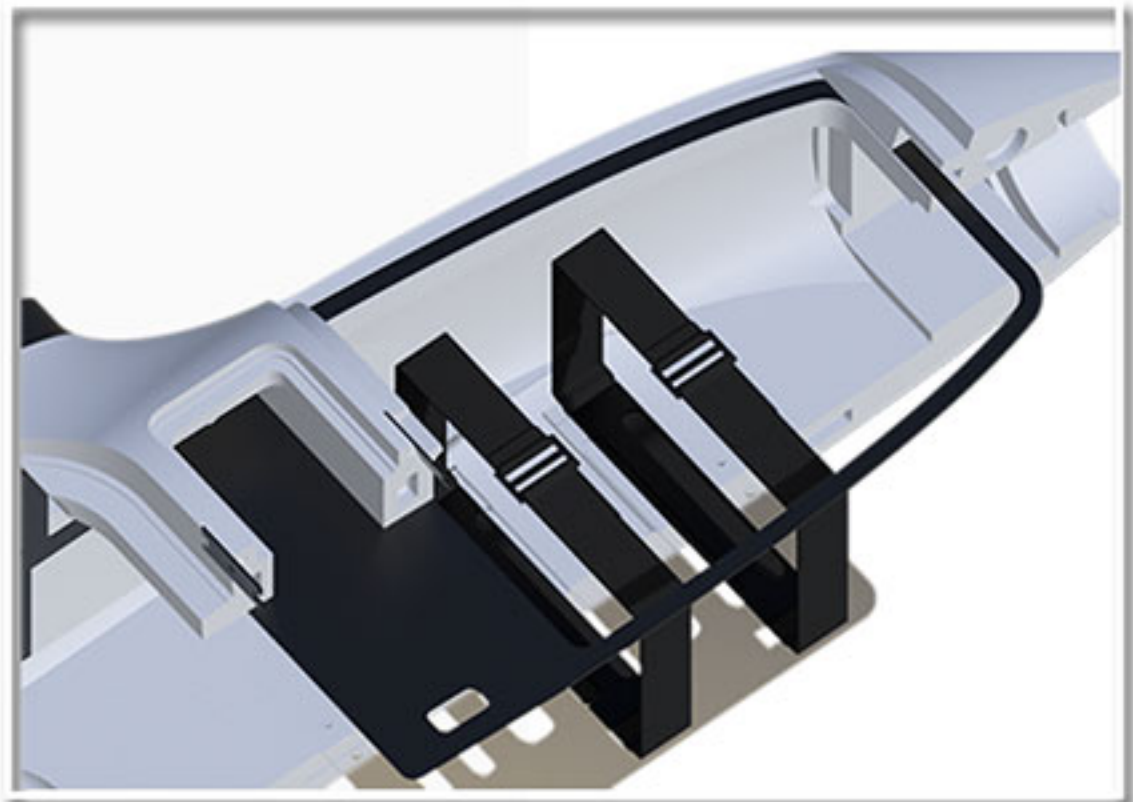
Battery Cabin



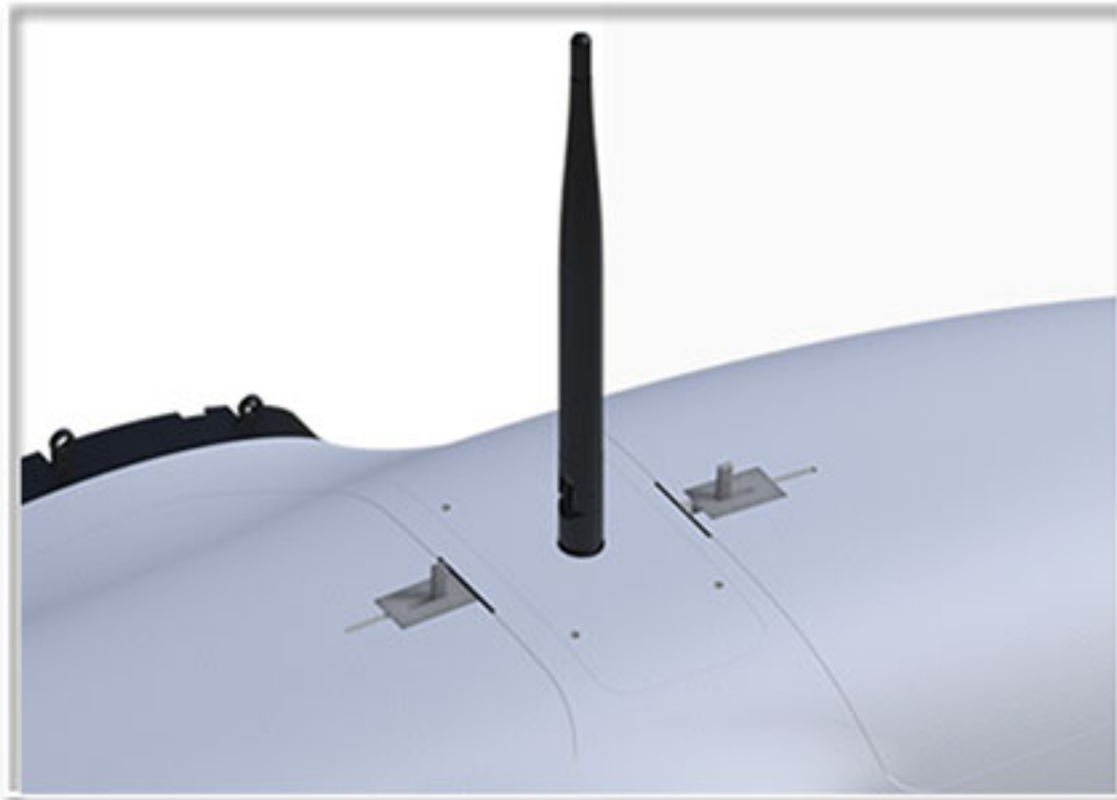
Battery cabin supports 2
6S@16000 / 22000mAh(Li-Po)
which provides strong power
for long endurance

The battery fixed seat is
made of PC board and CNC
machined, with light weight
and good impact resistance

The dual battery cable tie
has a reasonable layout,
which effectively avoids
entanglement



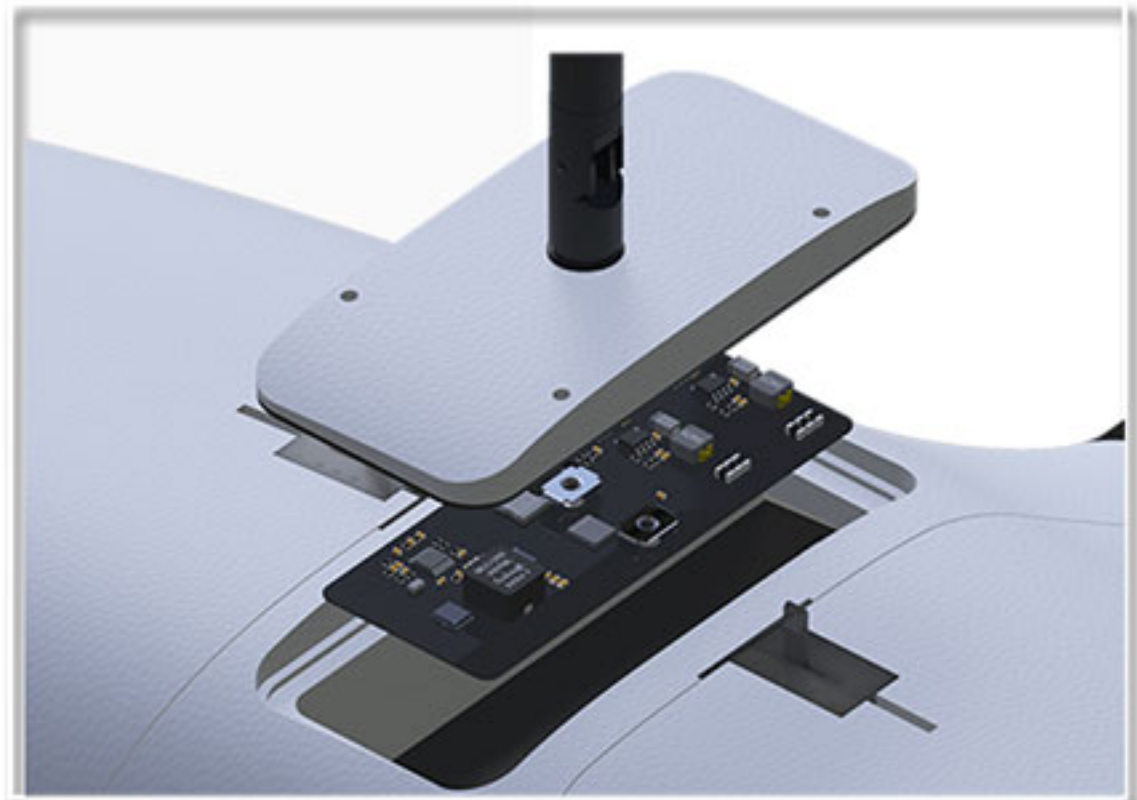
Distribution Cabin



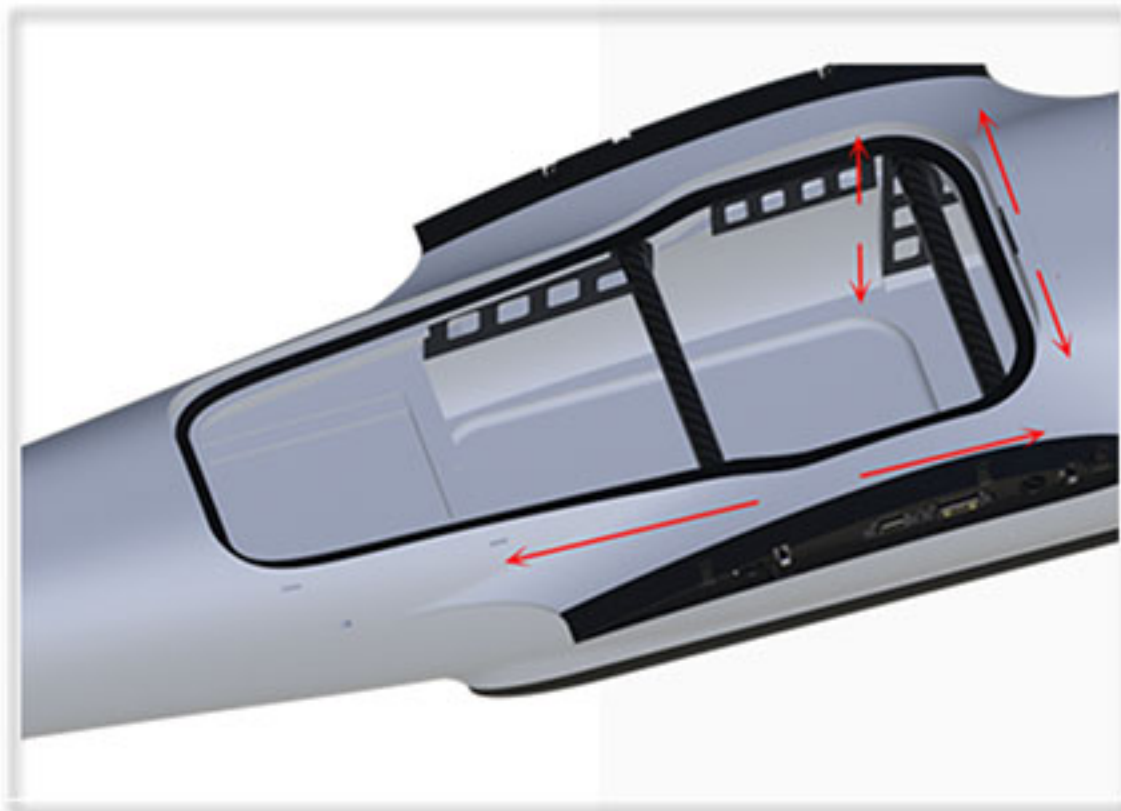
The distribution cabin cover is reserved with data transmission antenna holes, which is convenient for the assembly and disassembly of the antenna

The design of the distribution cabin shortens the wire path and improves the electromagnetic environment of the aircraft

With the power distribution board, the power system of the fuselage can be quickly replaced

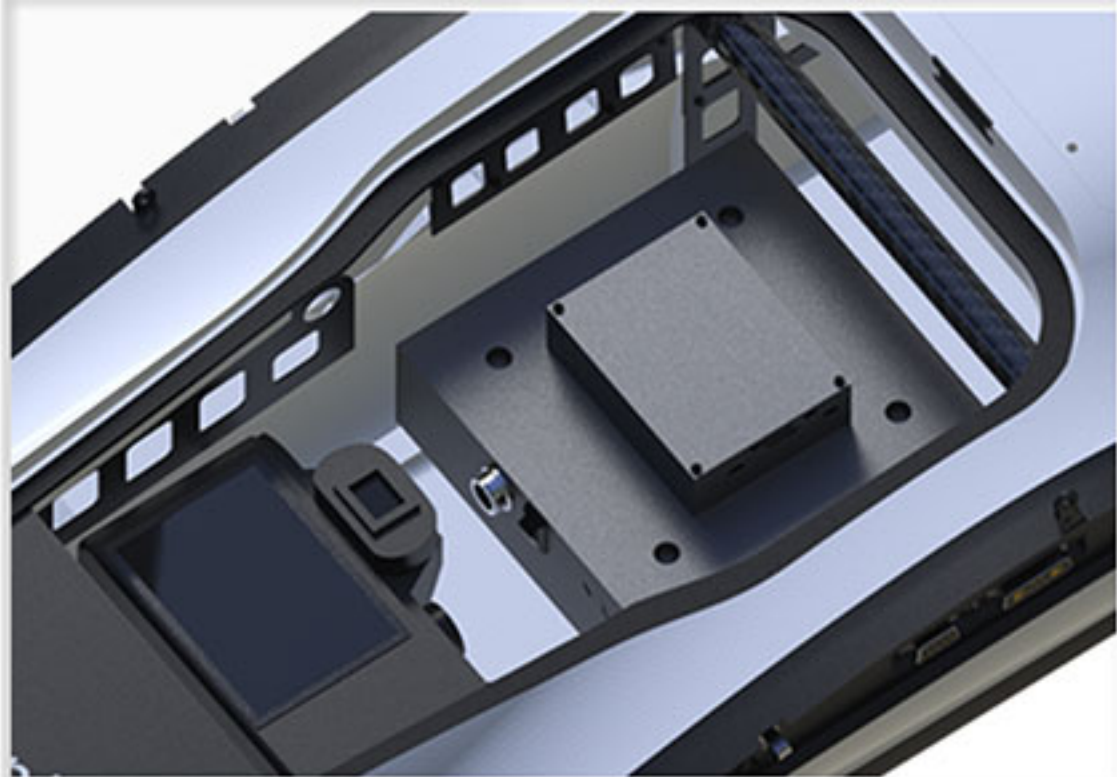


Load Cabin



Load cabin size:
280×160×110mm

A7R / A7R2, five-lens
half-frame tilt camera can
be placed in the main
cabin





The auxiliary carbon tube adopts a toolless quick-release design. After disassembly, it can open the main and auxiliary cabin. It can be equipped with a five-lens full-frame tilt camera or a 1.5kg lightweight lidar

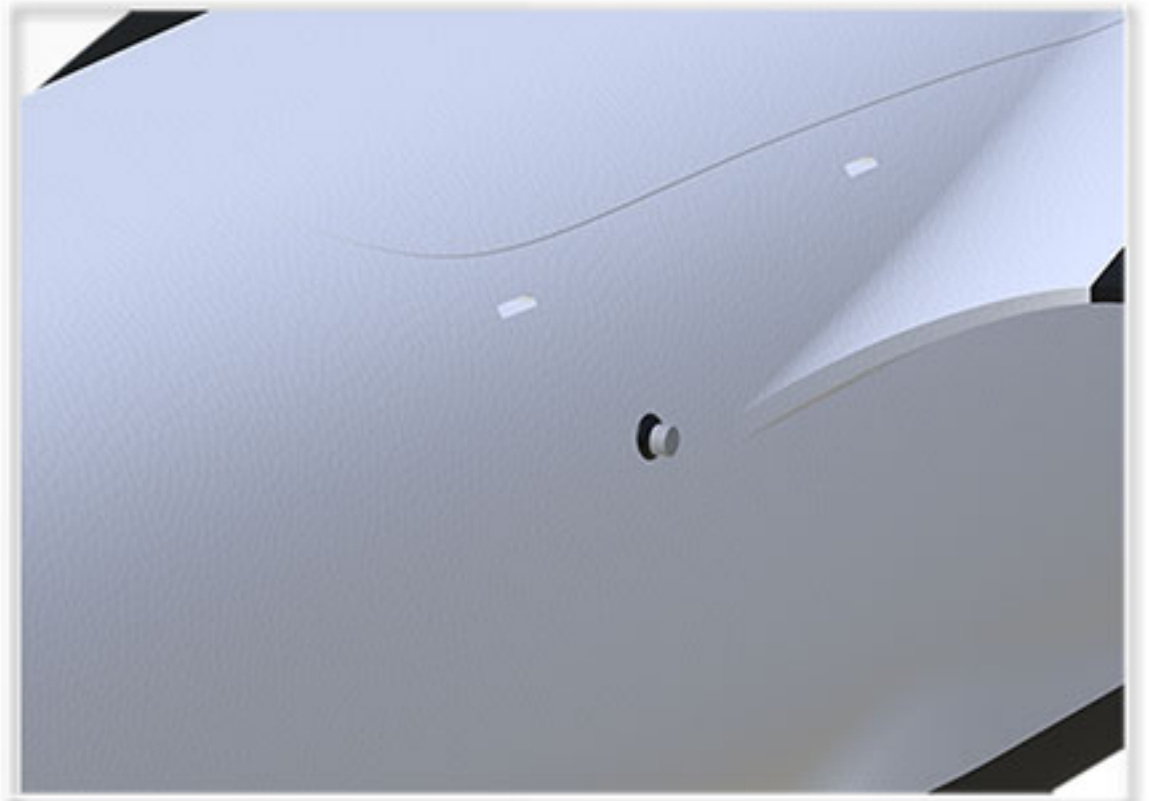
Flight control Cabin



The open platform design of the flight control cabin facilitates the installation of open source /commercial flight control installation

Cooperating with the center board can make full use of the space layout, greatly optimizing the line sequence and direction

The double-sided round holes ensure the accurate height measurement of the flight control barometer and also facilitate the installation and use of safety switches





Cooperate with the flight control protective cover to prevent foreign matter from falling, beautiful and dustproof

RTK/GPS

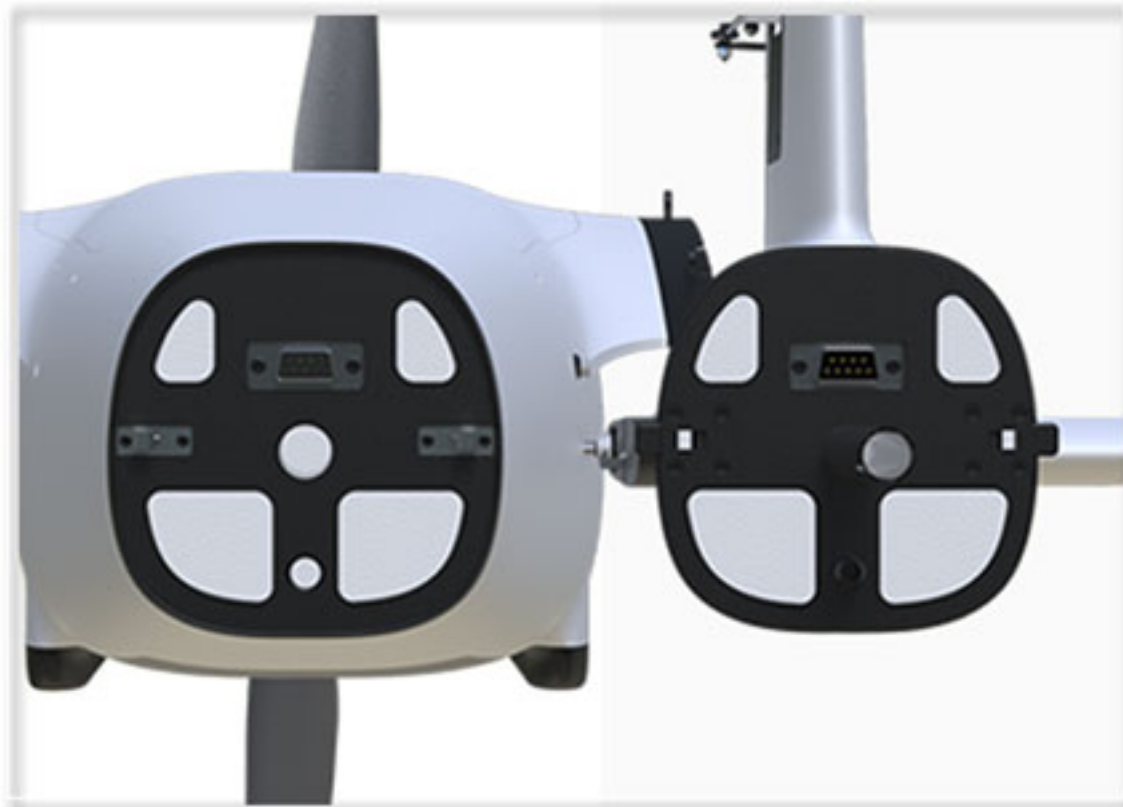


The RTK / PPK antenna position is reserved at the rear of the flight control cabin, and with the RTK / PPK module, it can improve the POS data accuracy

The GPS module is located at the rear of the fuselage, with a size of 69 × 63 × 18mm, which can accommodate flight control GPS and compass modules. The electromagnetic environment is clean

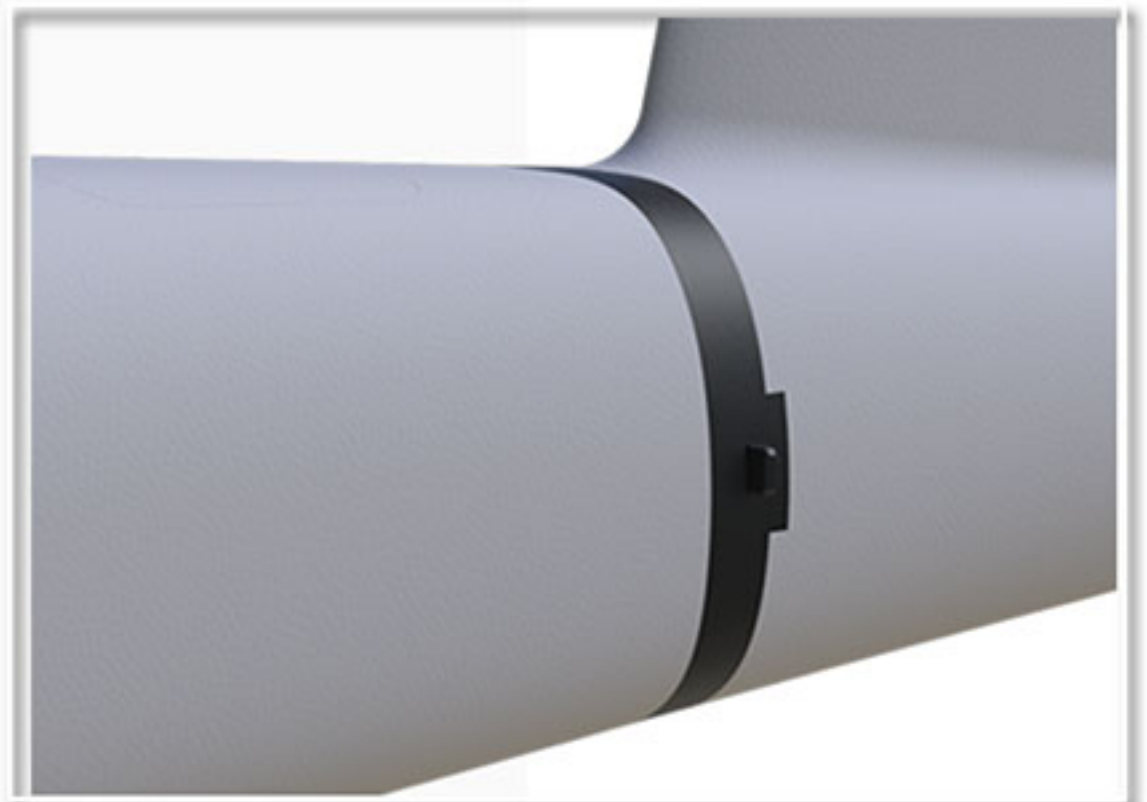


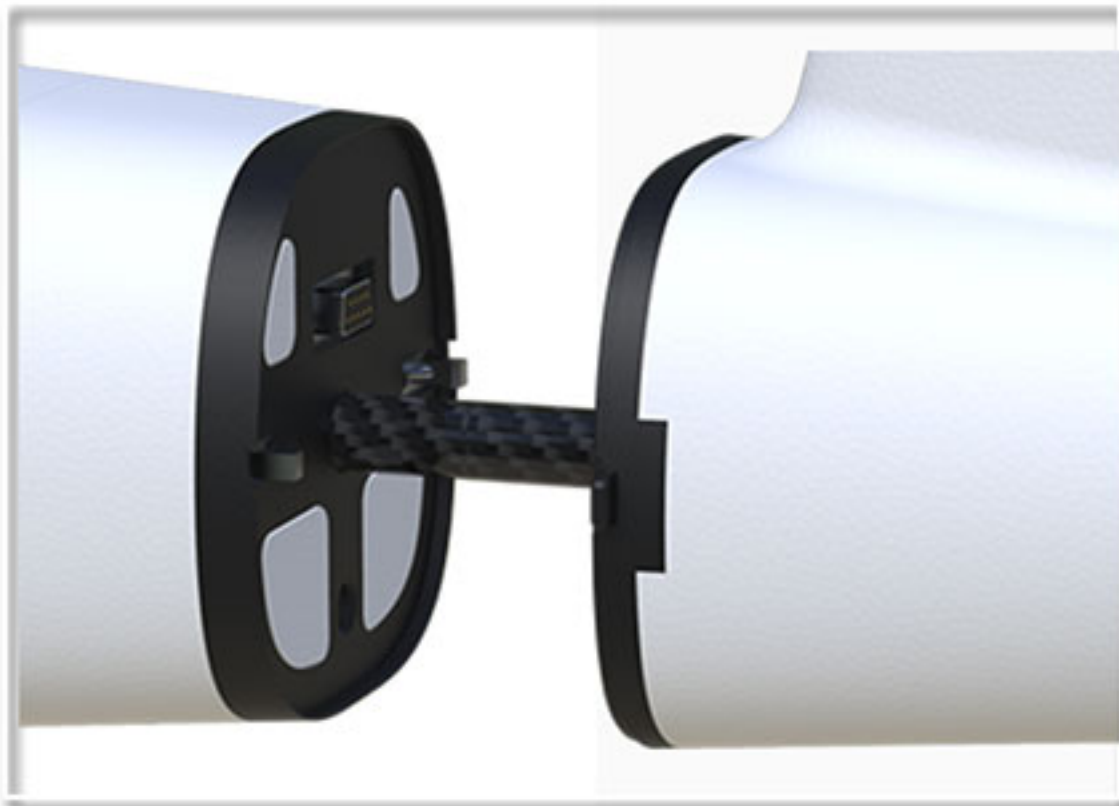
Vertical Tail



The vertical tail and fuselage adopt a 5-point integrated tool-less quick-release structure

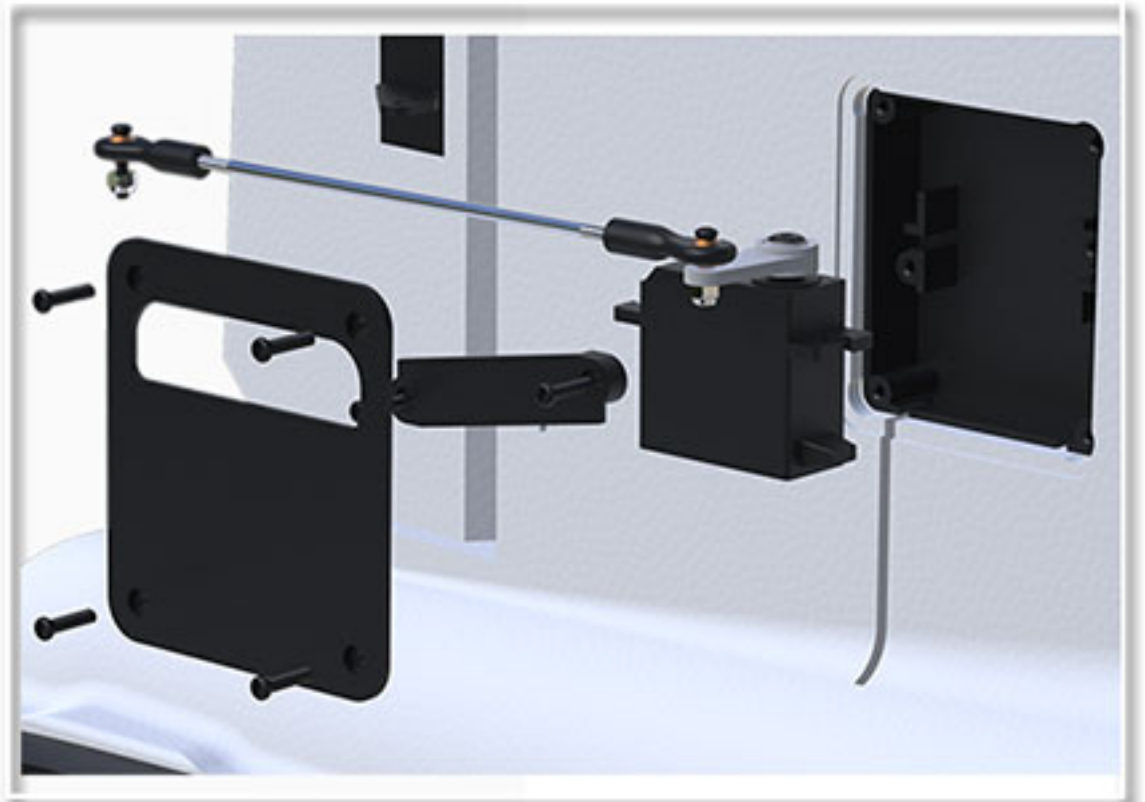
When closed, the plastic parts on both sides form an embedded box structure, which has strong resistance to compression, tension and torsion

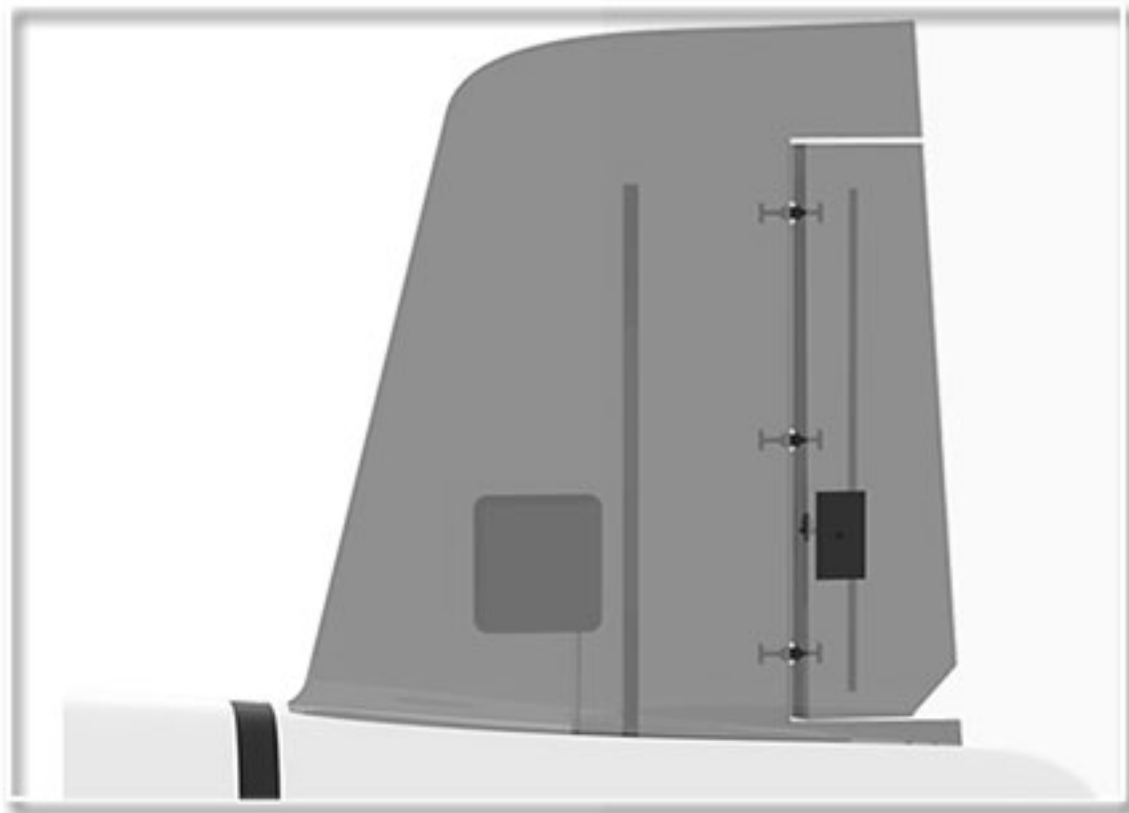




The 9-pin gold-plated connector is used to realize the mechanical and electrical separation of the tail and the fuselage

The vertical tail servo can be disassembled and assembled, which is convenient for maintenance.

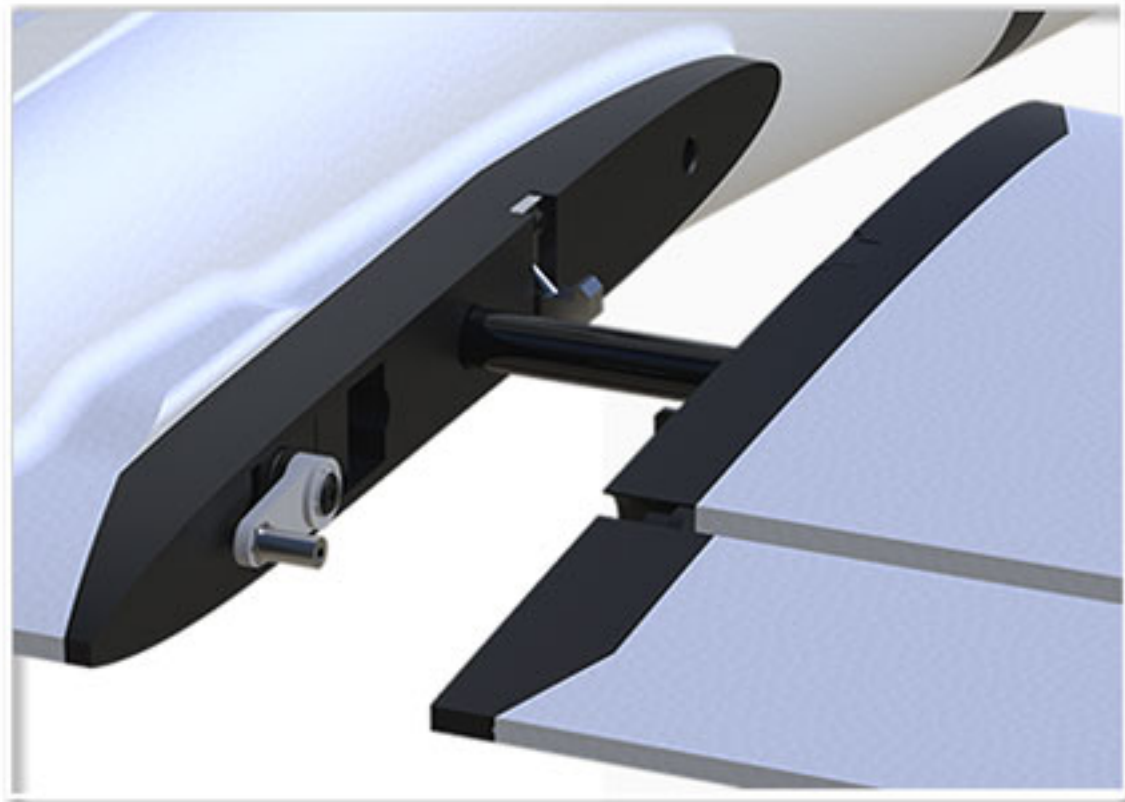




Embedded carbon tubes on the vertical tail rudder surface increase the strength of rudder surface, increase the rudder angle fixing plate, and increase the rudder surface response speed

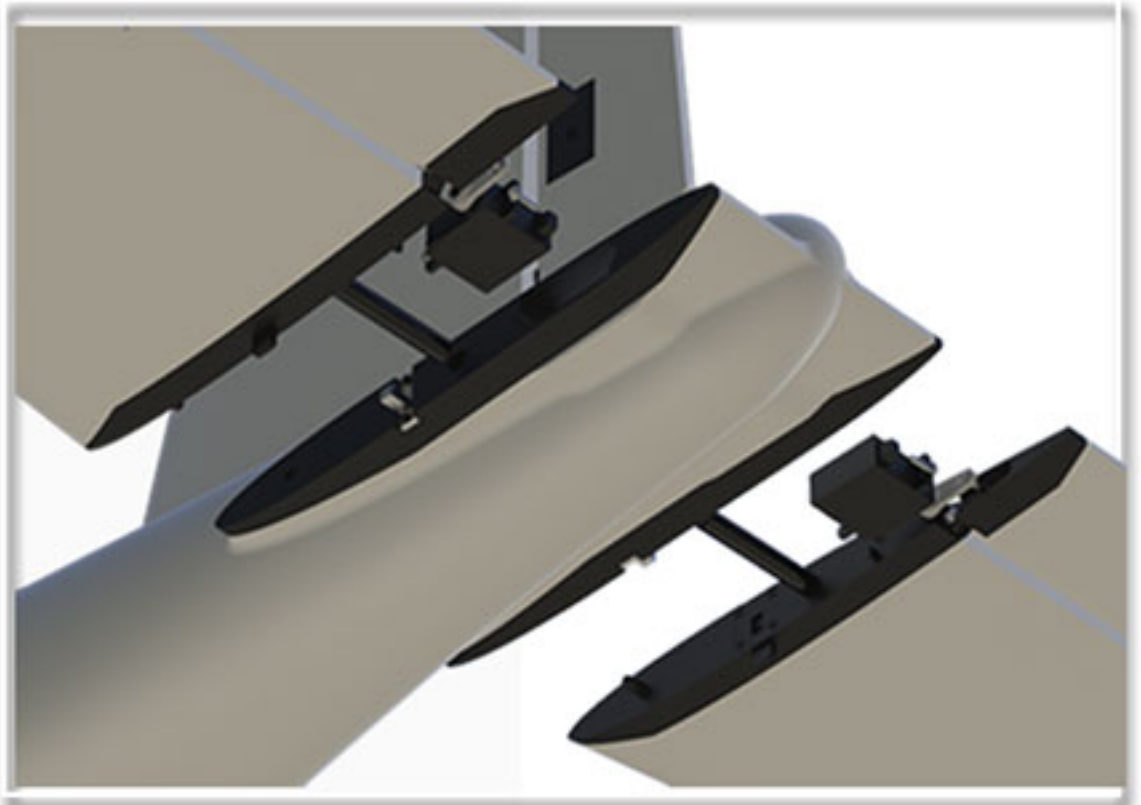
Three hinges connect the rudder surface, reduce the rotation resistance and increase the accuracy of rudder surface execution

Horizontal Tail



The horizontal tail adopts a tool-less quick-release structure, which is automatically locked when it is pushed and pulled out immediately when pressed

The left and right horizontal tails are designed with independent control of dual servo. Even if one side fails, the aircraft can return, which improves the safety of the aircraft



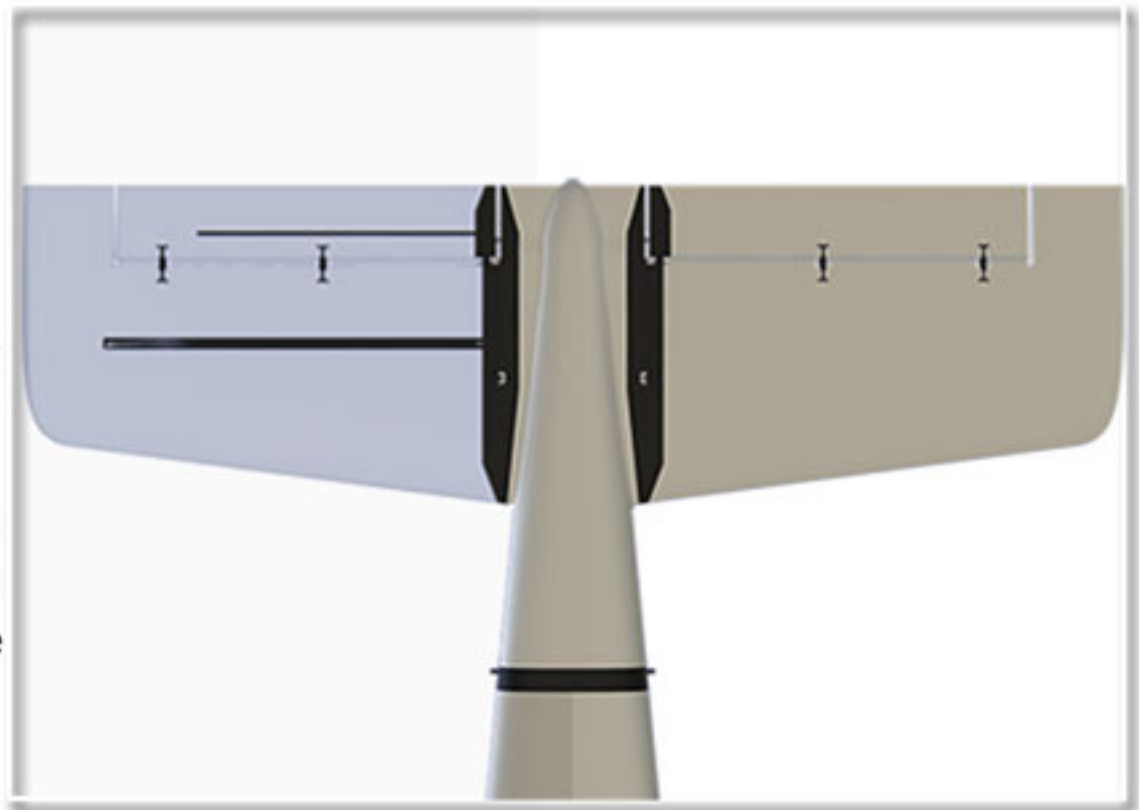
Horizontal tail servos do not need to be buried in advance, which is convenient for servo maintenance

The rocker arm of servo adopts an embedded design, even if the rocker arm transmission column is loose, the rudder surface is also accurately executed



Carbon tubes are embedded in the rudder surface of the horizontal tail to increase the strength of the rudder surface

Four hinges connect the rudder surface, reduce the rotation resistance and increase the accuracy of rudder surface execution

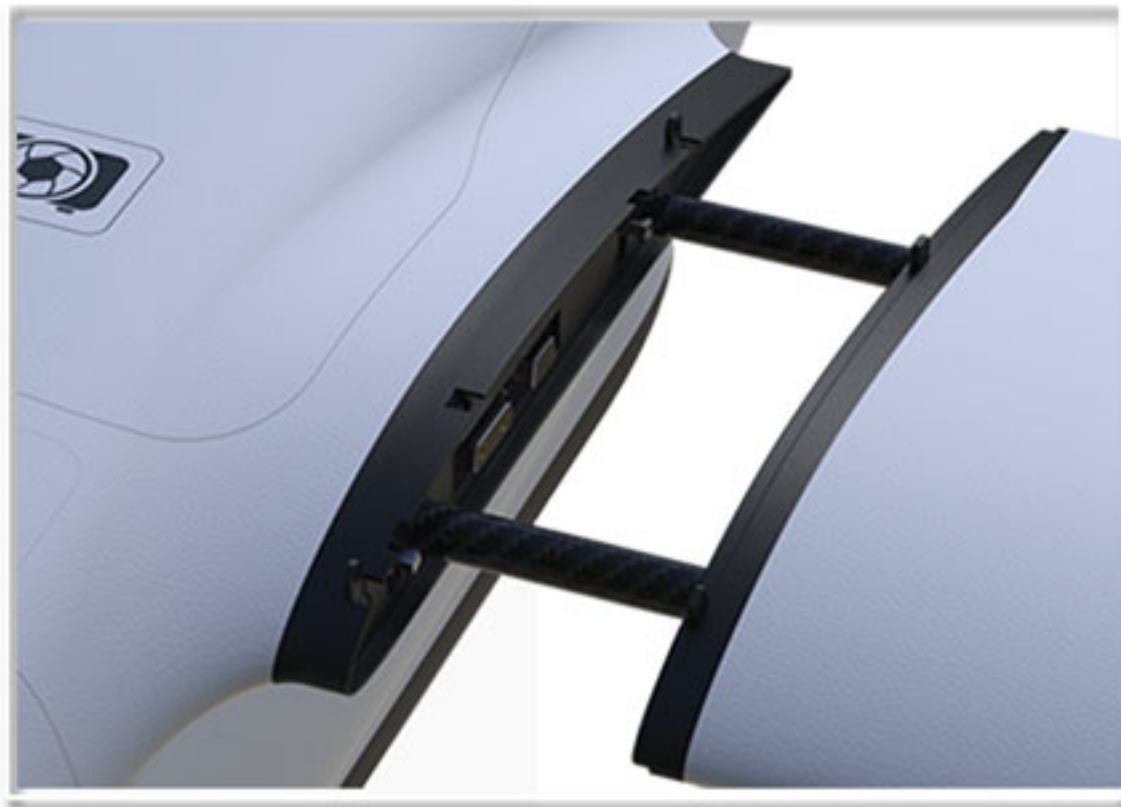


Wing



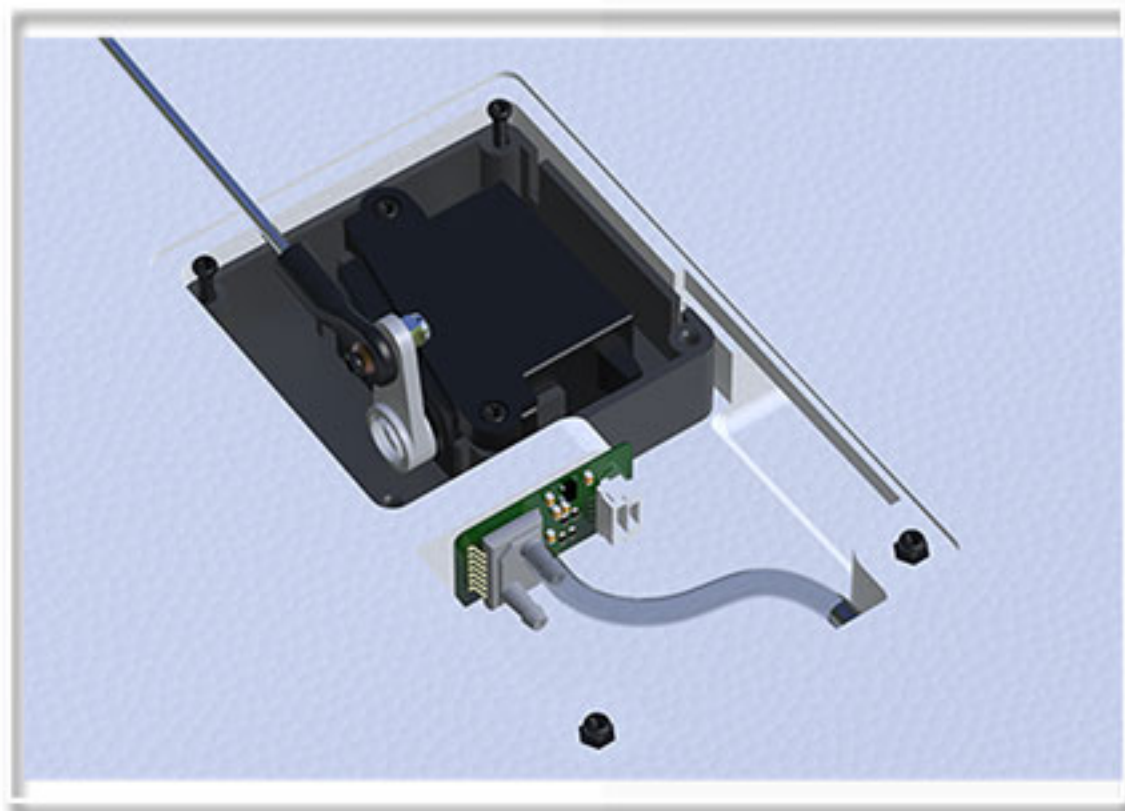
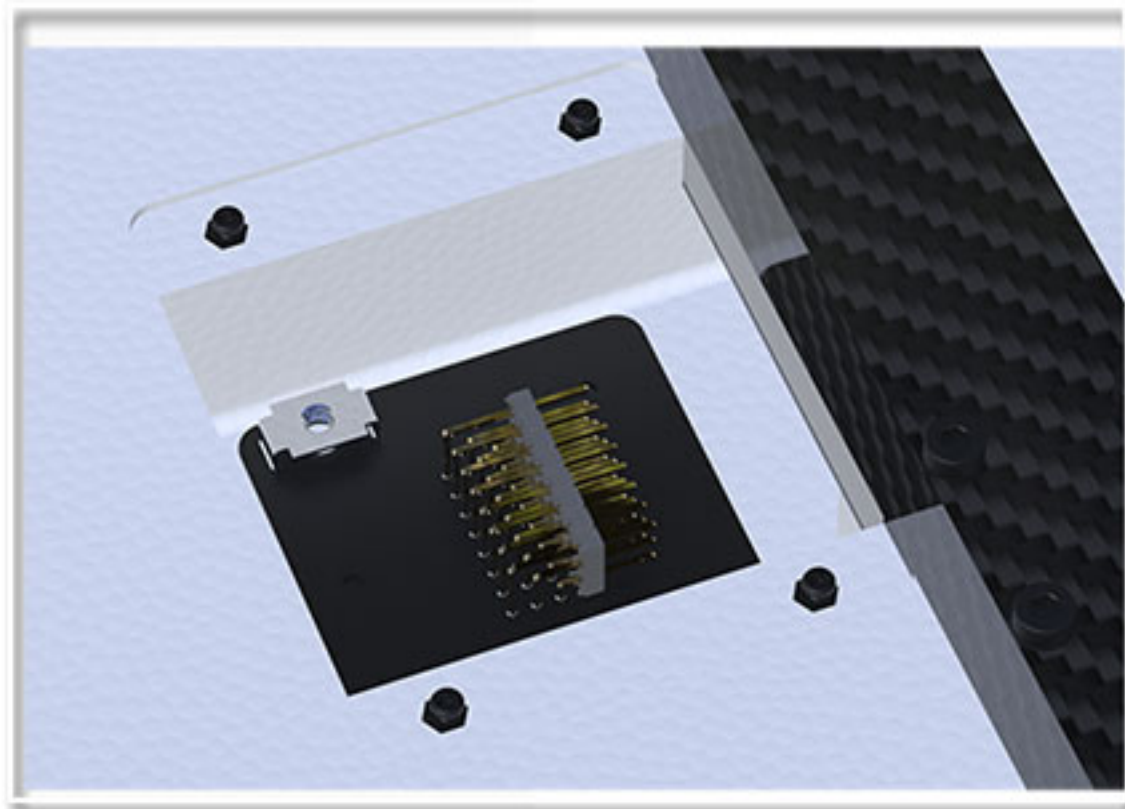
$\phi 12 \times 1000\text{mm}$ Outer covering
 $\phi 14 \times 560\text{mm}$ Main carbon tube
 $\phi 12 \times 600\text{mm}$ Auxiliary carbon tube
Ensure the overall rigidity of the wing.

The wing and fuselage with the embedded box structure enhance the contortion resistance of the wing



Dual connector can realize signal line redundancy, improve system stability, reduce wiring difficulty, and is compatible with 4 + 2 layout

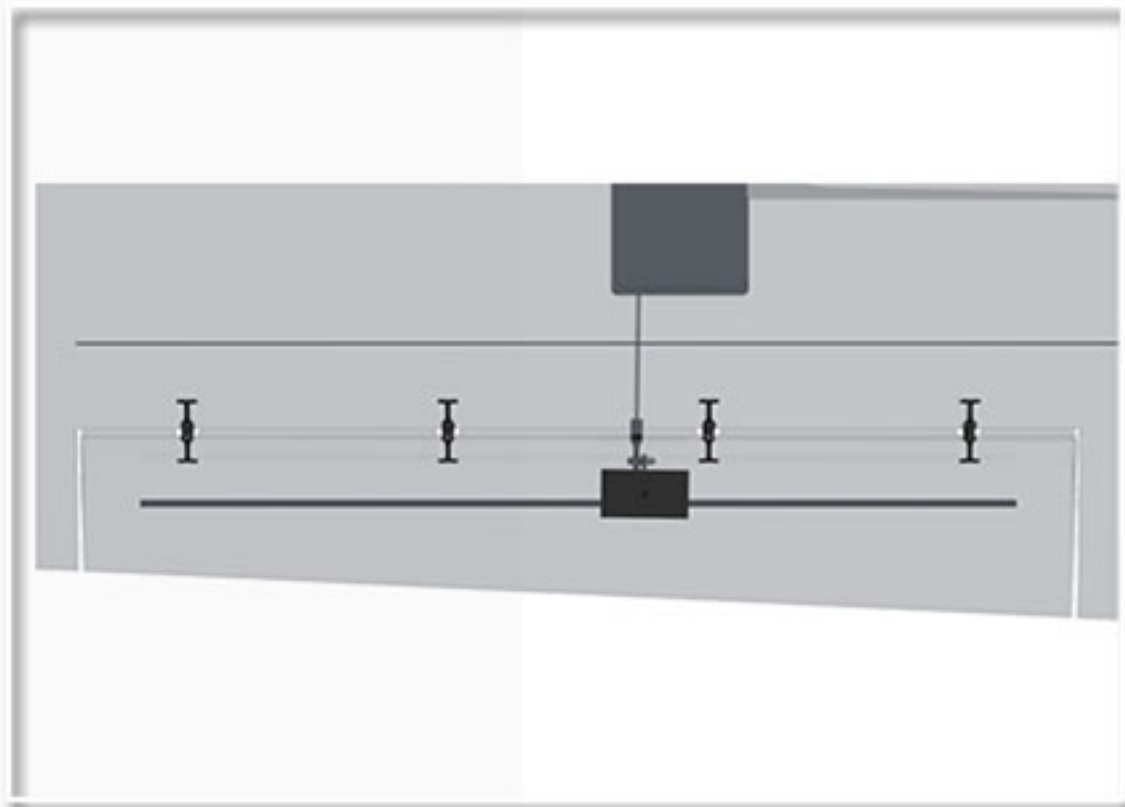
The wing wiring cabin facilitates the installation of power signal cables. With the wiring board, the wing power system can be quickly disassembled and assembled



The aileron servo cabin not only facilitates replacing servo, but also can be equipped with an airspeed meter module to improve the airspeed detection accuracy

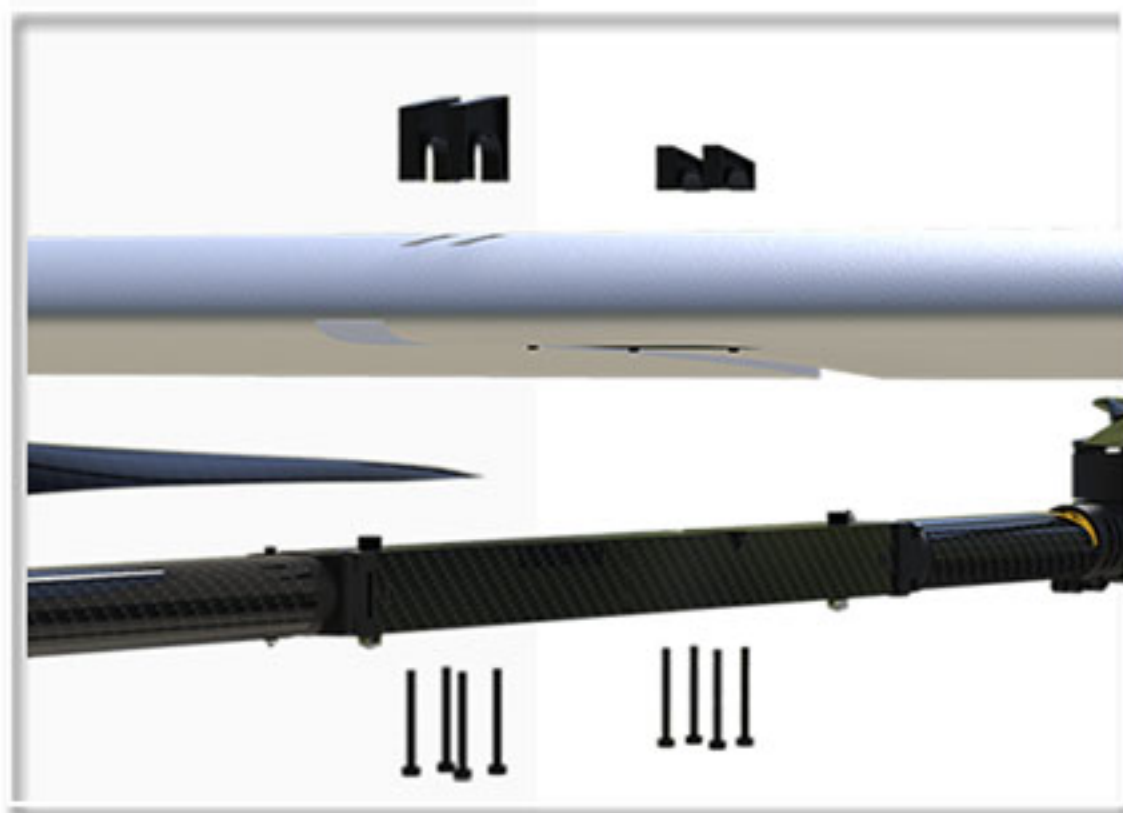
Embedded carbon tubes on the Aileron rudder surface increase the strength of rudder surface, increase the rudder angle fixing plate, and increase the rudder surface response speed

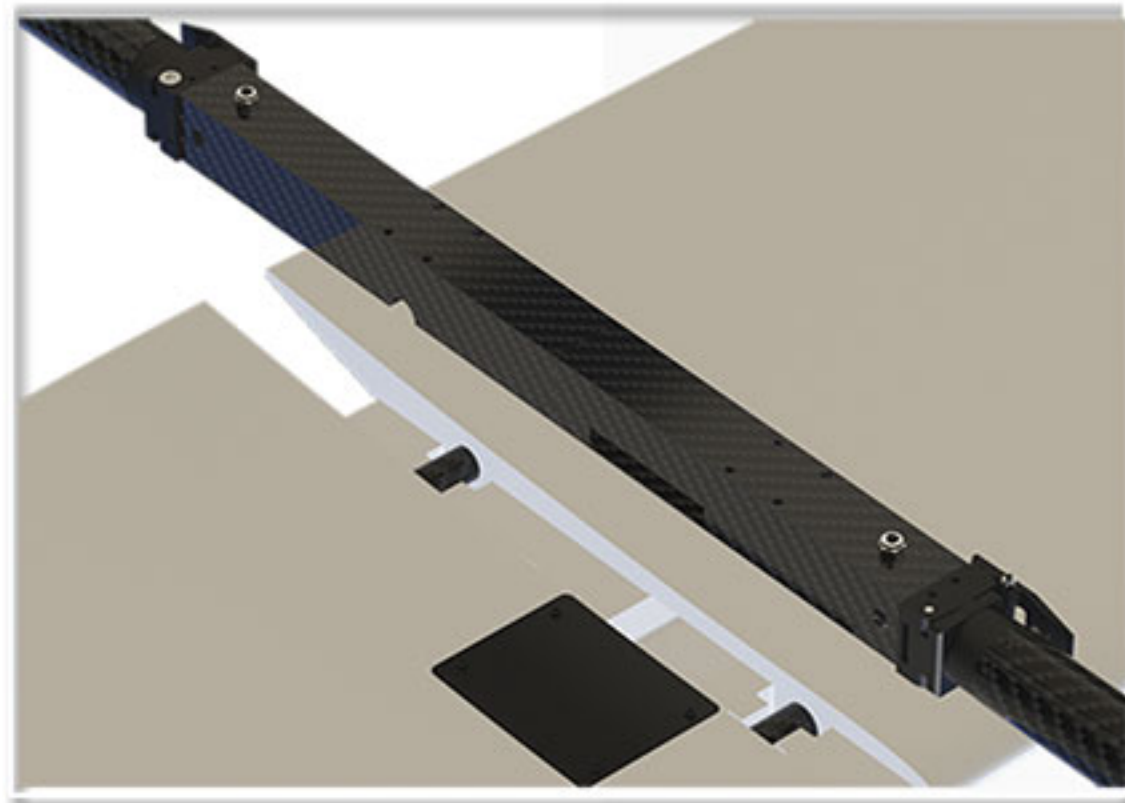
Four hinges connect the rudder surface, reduce the rotation resistance and increase the accuracy of rudder surface execution



VTOL Structure

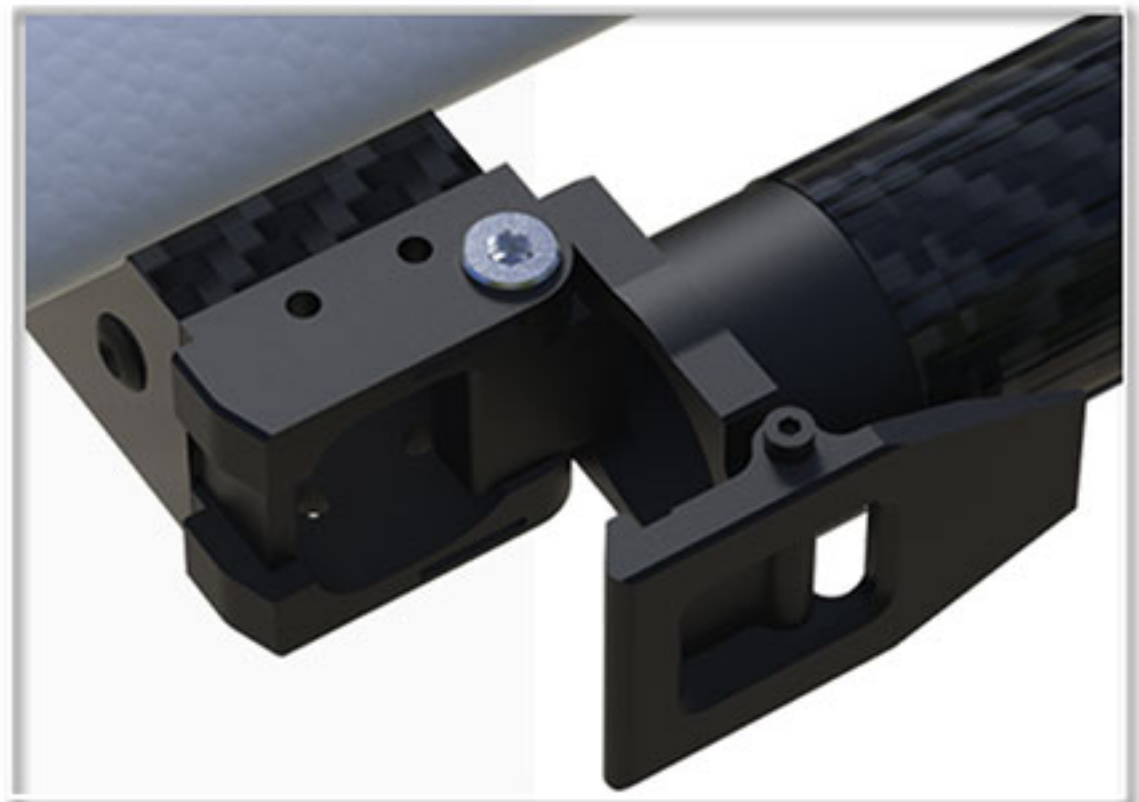
The multi-axis arm can be installed and removed as a whole, which is convenient for use and maintenance





The fuselage adopts 25mm carbon fiber square tube, which not only ensures the rigidity but also has enough space for wiring and casing

The arm adopts self-locking folding structure, which can be folded with one press and locked with one turn



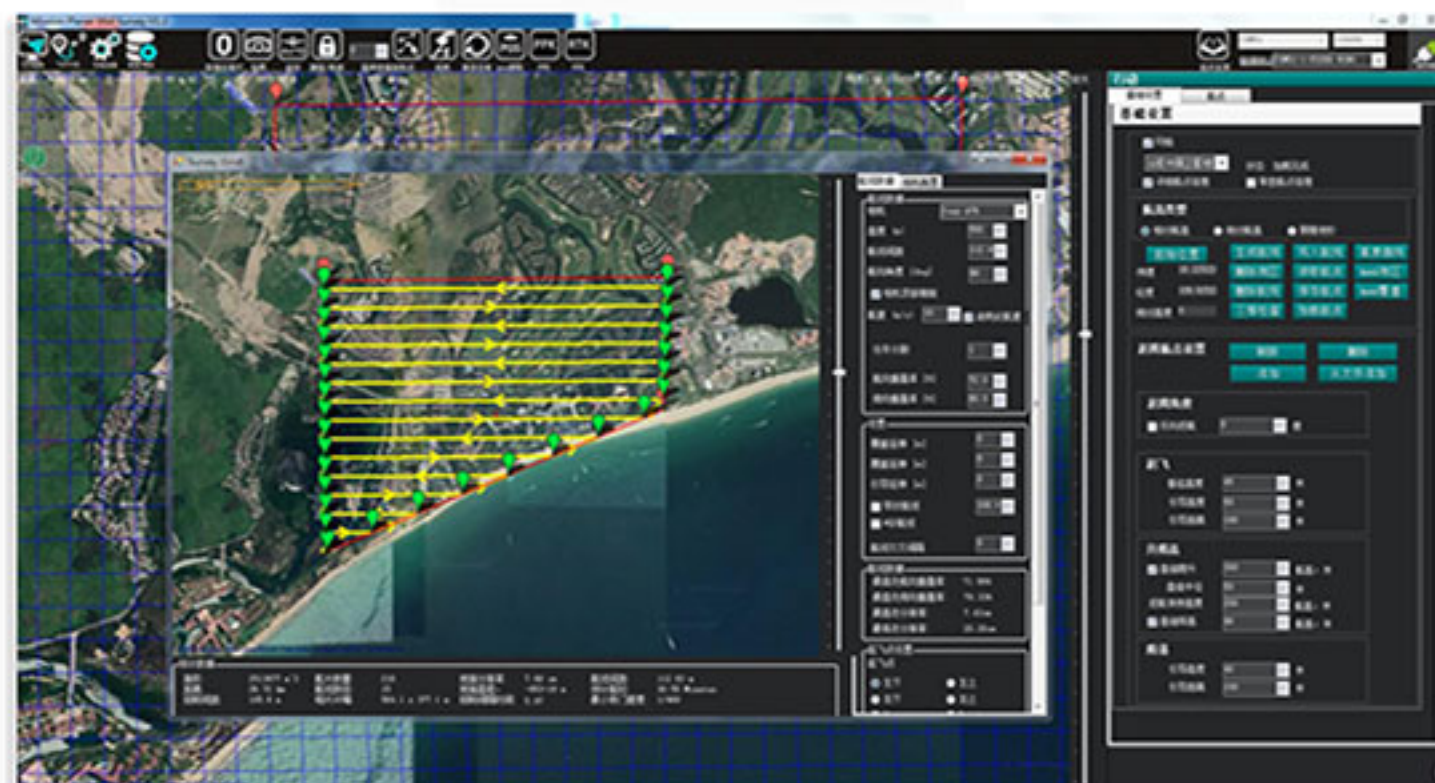


The multi-axis motor base is made of aluminum alloy CNC machined, and the surface is anodic oxidized to increase abrasion resistance and corrosion resistance

The motor frame supports the largest $\phi 60\text{mm}$ motor, and the size of the ESC cabin is $63 \times 43 \times 13\text{mm}$ with customize ESC, waterproof and dustproof, good heat dissipation effect, no fear of harsh external work environment



Deeply Optimized Ground Station (Always Free)



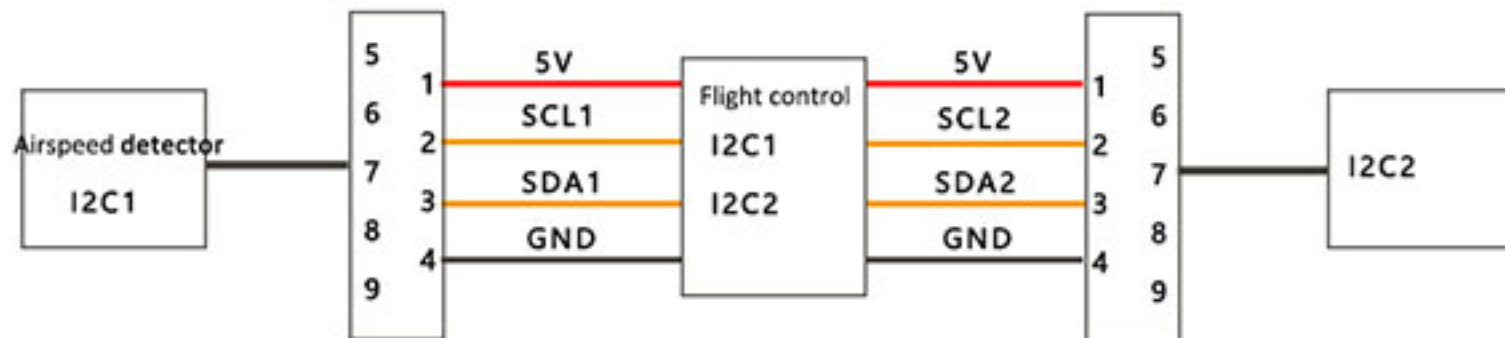
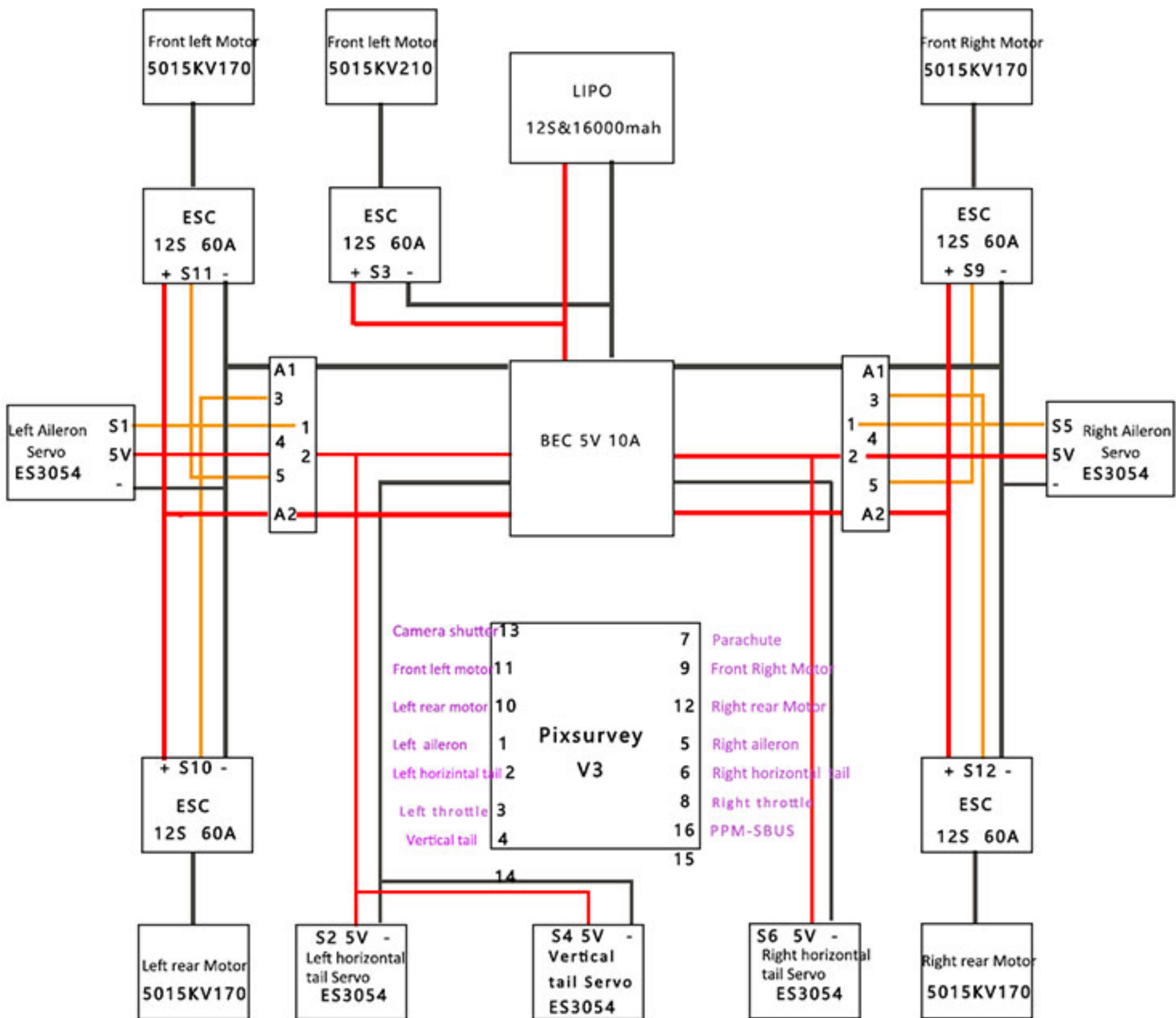
Mission Planner Vtol Survey ground station is based on Mission Planner, which is deeply optimized according to the characteristics of aerial survey operations. It is concise and efficient, and is suitable for new users to get start quickly

Technical Support



We have complete user manuals which can be downloaded in our website, and welcome to join our QQ group, aerial survey enthusiasts and technical support are waiting for you here!

Wiring Diagram



Configuration List of Spare Parts

| Fighter VTOL Configuration List | | | |
|---------------------------------|------------------------------|-----|-----|
| Type | Model | KIT | PNP |
| Aircraft | Left Wing | 1 | 1 |
| | Right Wing | 1 | 1 |
| | Vertical Machine Arm | 2 | 2 |
| | VTOL Motor Frame | 4 | 4 |
| | Fuselage | 1 | 1 |
| | Fuselage Parts | 1 | 1 |
| | Vertical Tail | 1 | 1 |
| | Horizontal Tail | 1 | 1 |
| | Small Components Packet | 1 | 1 |
| | Foam Packing Box | 1 | 1 |
| | Carton | 1 | 1 |
| Power System | Cruise 5015 kv210 Disc Motor | | 1 |
| | 12S 60A Brushless ESC | | 1 |
| | Cruise Propeller APC2013 | | 1 |
| | VTOL 5015 kv170 Disc Motor | | 4 |
| | 12S 40A Brushless ESC | | 4 |
| | VTOL Propeller CW&CCW 2070 | | 2 |
| | Fixed-wing Servo 3054 | | 5 |
| | 12S BEC 5V10A | | 1 |
| | Wing Wiring Board | | 2 |
| | Wire Package | | 1 |

Head Cabin

The head supports a motor with a maximum outer rotor diameter of 68mm, and the ESC

Specifications

| | | | |
|---------------|------|--------|-----------------------------------|
| Material | Foam | Origin | Mainland China |
| Recommend Age | 14+y | Use | Vehicles & Remote Control Toys |