

Drone No. :

Agriculture Drone C-20 Instruction Book



Manufacturer: WENZHOU BLACK DRAGONFLY UAV

TECHNOLOGY CO.,LTD

Address: Floor 12,Building 1,No.355,Binhai 12th Branch
Road,Economic and Technological Development Zone,Wenzhou
City,Zhejiang Province

Web: <http://www.hqtuav.com>

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Warning

Black Dragonfly multi-rotor drones are produced and sold by Wenzhou Black Dragonfly UAV Technology Co.,Ltd. The drones can operate in low altitude. But this drone is not a toy even when the drone is empty loading . It is dangerous to be operated by a unprofessional people . The drone is not only controlled by human, but also by kinds radio signal, inductor.we have tried our best to make sure the drone operate stable and safely in low altitude, but the operator should comply with our instructions. All the operates should be in the work range of local law and order , far away from crowd people ,assess if the environment condition is suitable for operating . Wenzhou Black Dragonfly company don't undertake the responsibility for faulse and uncontrollable operation .

Legal Disclaimer

If operator error install , refit and misuse the drone in the condition such as thunder,strong breeze, strong magnetic interference,heavy rain, or fly over human and anything valuable , Wenzhou Black Dragonfly company don't accept any losses and responsibilities .

Improper handling of pesticides will be harmful to human's health ,it also leads to soil and water degradation, to avoid human and animal poisoning and environment pollution , operator should strictly comply with pesticide manufacturer's safety instructions .

If you have any problem during operation , or if you have any advises , please contact our local dealers or directly contact our after-sales department . Our hotline is 0086-577-28959998

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1) Brief Introduction

From over years researching in Black Dragonfly drone system and within huge investment , we have got more then 30 patents and own independent property rights. Our flight control use adaptive synovium algorithm,the drones can be one button to fly under bad conditions .The positioning can be accurated to centimeters . The drone can autonomous navigate and fly .The centrifugal intelligent atomizer can accumulate spray , precision spray and quantitative spray . It also automatic turn back,plan route ,avoid obstacle which make flight more safety. The background management system can hd show geography , has different icon for drone online , flying and offline ,it also can regulatory ,allocate and remote control drone flying . The operating routes are clearly shown in background , operator can take out any flying datas including operating area,mode and pesticides dosages . In the same time, the datas can be checked based on weeks, months and years .

2) Warning

Black Dragonfly multi-rotor drones are produced and sold by Wenzhou Black Dragonfly UAV Technology Co.,Ltd. The drones can operate in low altitude. But this drone is not a toy even when the drone is empty loading . It is dangerous to be operated by a unprofessional people . Check all the working conditions before start flying to ensure there won't have any problems such as if battery full of power , if drone parts looses. Don't fly the drone out of your view , or it can not ensure the safety and leads to uncontrollable. Check landform , don't fly in unfamiliar and lots of obstacles area . Don't fly in thunder , strong wind , crowd people as well as banned area of law . You can use our standard battery , charger and parts only . Wenzhou Black Dragonfly company don't undertake the responsibility for faulse and uncontrollable operation .

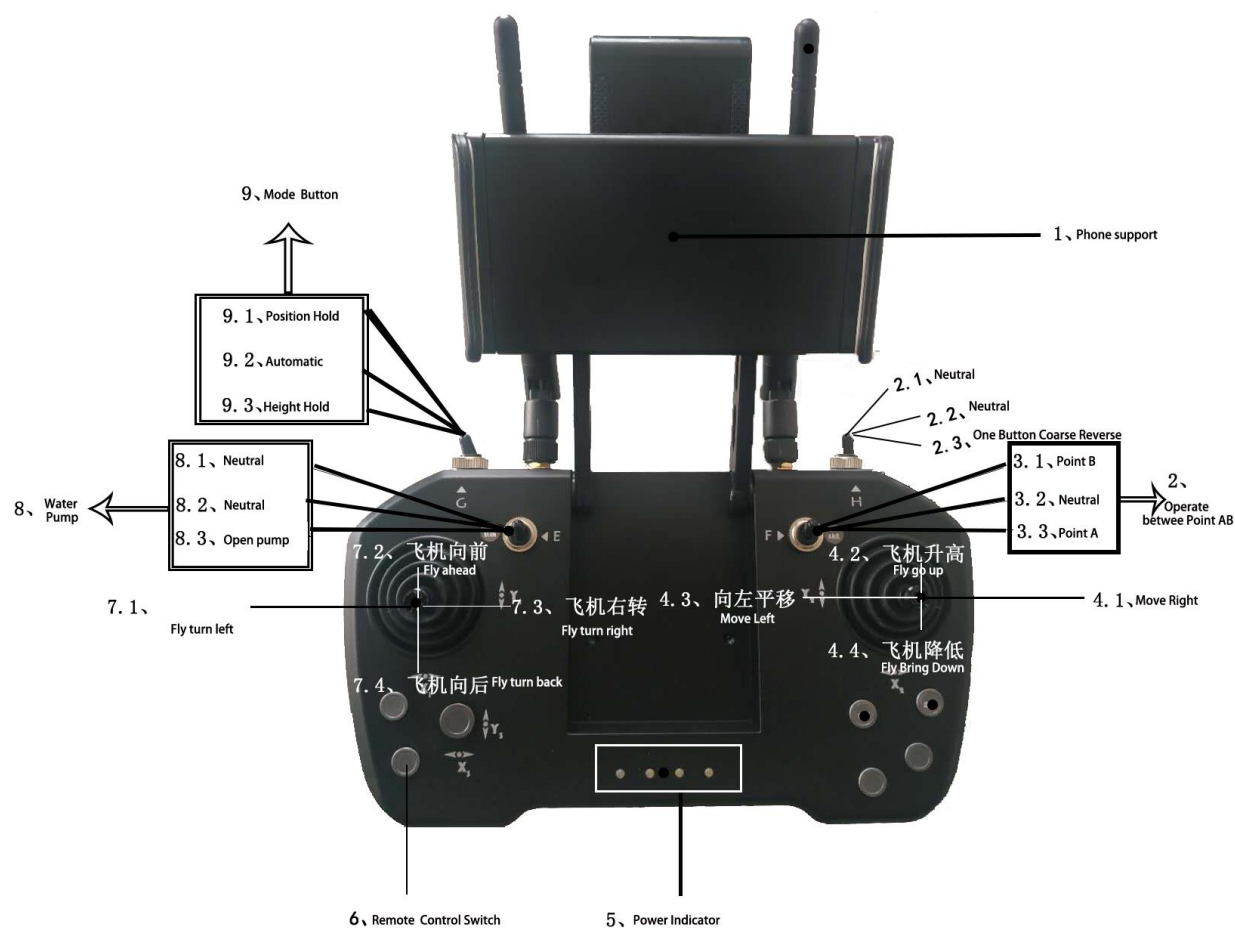
3) Cautions

When you are trying to use our drones , please follow below notes:

- 1、 The installation has been be completed by our company , we not allow do it privately.The user open packaged ,spread the wings and put on battery then can use the drone . If you changed motor or paddles , you need check the paddle positive and negative rotation before start flying.
- 2、 Before flying but after your turned on power , the drone will be self inspected, in this time .the drone should be put on horizontal ground , or the drone will drift when flying .The greater the slope of ground , the larger drift flying.
- 3、 Before flying ,turn on remote control device first ,then connect power.After flying back,take off battery first, then turn off remote control.
- 4、 Before flying check facility around , such as infinity tower,high voltage wire,transformer substation and large piece of magnetic metal . These parts will interference to remote signals and compasses and threaten flight safe .
- 5、 Before flying , check all the wire connects right , all the drone parts don't loose .
- 6、 Anytime when you are operating the drone , you should be in good spirits.
- 7、 If GPS signal is not good , don't fly.
- 8、 Never put the throttle rod under 10% of stall position , or the motor will stop and drone will crash .
- 9、 When drone is landing , throttle rod should be in lowest position till drone is locked .
- 10、 If you want brake during operating ,you need leave 5-8m distance in advance , as the inertia is big .
- 11、 Best spraying altitude is 2-3 meters over crops , the practice or operating height can not be over 10m.
- 13、 You are forbidden to uninstall the drone .
- 14、 All the people should keep more than 3m distance when start flying , and should not fly over human or things valuable . Operator also can not be too close to drone .
- 15、 When the battery comes to low voltage alarm, you need change battery and send back the old one .
- 16、 You are forbidden to hit drones.
- 17、 You are forbidden to use solvent such as benzene and diluent clean drones , corrosive chemicals and detergent are also not forbidden .
- 18、 You are forbidden to put drone in sun for long time . Also forbid to be put in fog and dust .

4) Operate Instruction

1、 Remote control and the buttons



C-20 Remote Control

2、C-20 Drone Structures



5) Mobile app working steps

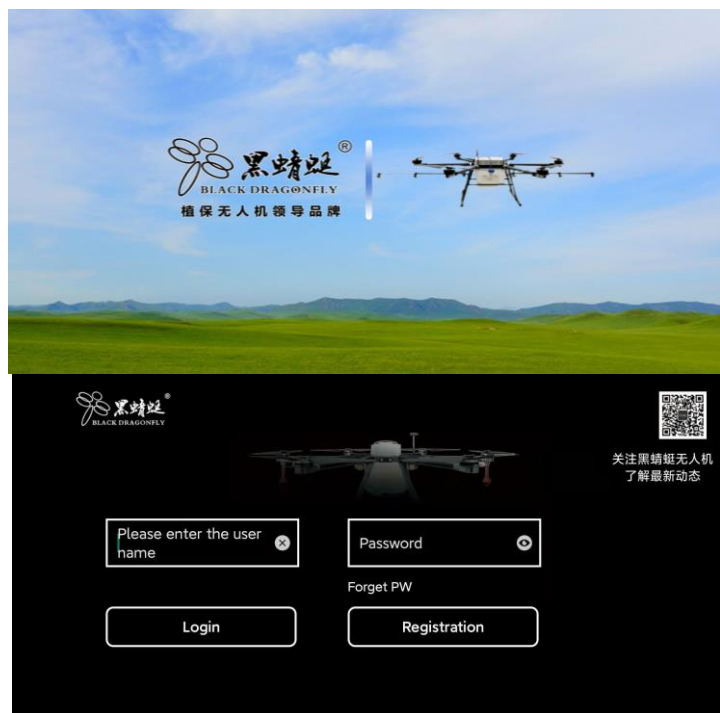
1、connect to bluetooth,initial password is 1234.

2、Register by your real name like picture 1 , details see picture 2,

Note: 1、 you must remember your username and password

2、 User type choose flyer


3、 Join plant protection team username is HQT88888



Picture 1

Picture 2

3、Connect to handle mapping device steps:

3.1、Click this button  on right top position, click setting, choose “handle mapping device” in device type, see picture 3.

3.2、Click “unconnected ” on left top position, connect to handle mapping device, then find your handle device name. Each handle device has a unique number, if you cannot find your device number, try to refresh, see picture 4.


3.3、Once you connect successfully, you can start dotting.



Picture 3



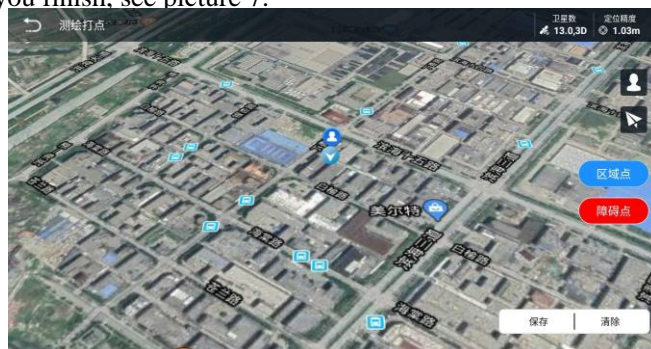
Picture 4

4、Click , choose device dotting, see picture 5.

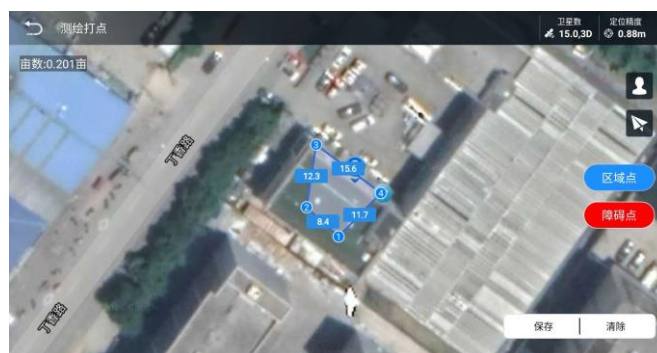


Picture 5

5、Click regional dot start dotting , if there has obstacle , you can set obstacle point after regional dot.see picture6,preserve when you finish, see picture 7.

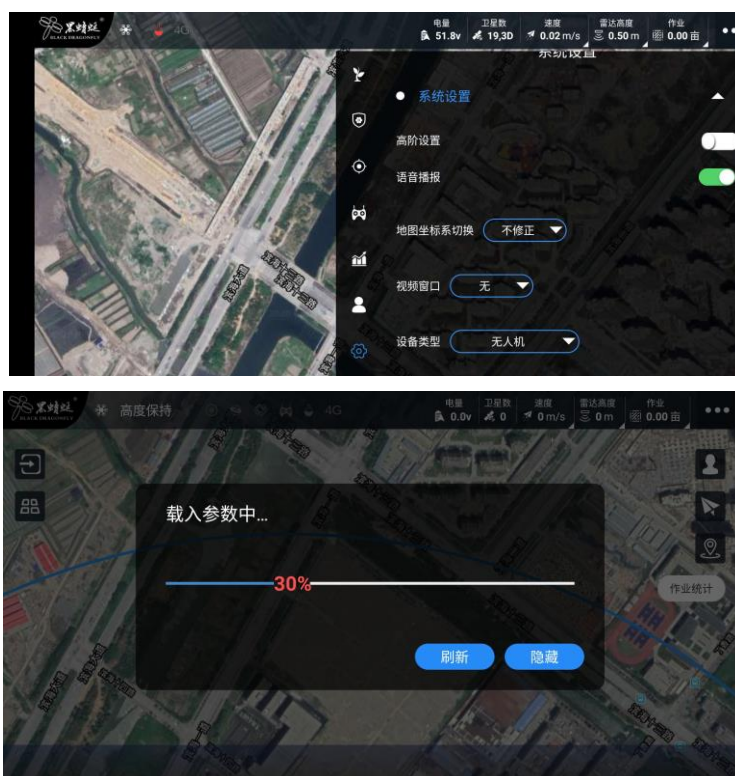


Picture 6



Picture 7

6、Disconnect the device , then start to connect drone , working steps are similar with connect handle mapping device , if you are successful , it will show like picture 8 .



Picture 8

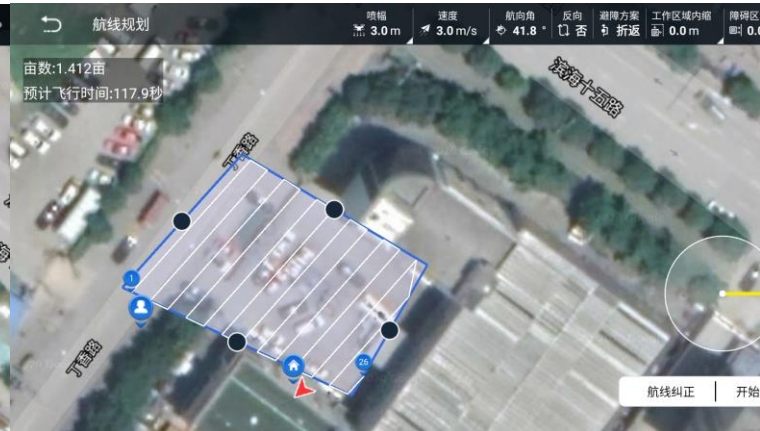
7、Click “call the work”, call the newest dotted plot,the history dotted plots are in

See picture 9,click start work,see picture 10 .

Note: longer time , the greater error on map , we need recalibrate map.



Picture 9



Picture 10

8、Planning the route,upload route range, see picture 11.



Picture 11

6) Drone Maintenance

In case any damage and loss, please comply with below items:

1. Clean the full drone after finished work :
 - Fill clean water full into container,turn on spray, repeat this for three times.
 - Seal the drone in packing bag,and put into flight case,store the flight case in dry area.
 - Clean drone with wet cloth, then clean by dry cloth ,do not clean by flow water .
2. Each time before and after operate :
 - Check if the plastic parts and rubber parts have been aged.
 - Check if the paddle loose ,replace by new paddle and gasket if loose.
 - Check if there has crack ,transformation and break on paddle, replace by new paddle if any of these occurs.
 - Check atomizer work conditions, if atomization not good , clean atomizer or change a new one .
3. Store if you don't use the drone:

- Keep an eye on the drones after stored in case others error operation.
 - Batteries and remote controller should be stored in fireproof,dampproof,anti blazing sun,insect prevention,and far away the place where electricity leaks .
 - Reliable fix the stores,ensure drones won't be squeezed.
 - If store in long time,you can uninstall the paddles in case they get transformation.
4. Don't maintain the drones by yourself, if there is any broken or any questions ,please contact Black Dragonfly technicians or the local dealers .

7) Transportation

Drones are easy broken machines,we need protect them during transportation based on below items:

1、Package and marking

The packed drones should be inspected strictly , all the docs are inside package;

Package should be tightly,protect well and in safety;

Package should be strong enough in case any damage and transformation during transportation;

Check every part has been packed inside the box according to packing list before transporation.

2、Transport type

According to the conditions , we advise transport by car .

3、Protection during transportation

There should have people supervise and double check the package according to packing list.The packed box should be fixed on the car ,bind them if needed .

It is forbidden to load and unload rudely .

4、When reach destination ,unload them and send them into your corresponding location in time,avoid a second time unload .

8) Battery Maintenance and Cautions

The batteries of Black Dragonfly drones are customized make , we own independent intellectual property rights . Quality is reliable , the power is enough for spray out the full container pesticides. Before charging read instruction book carefully and know very well the cautions. Lipo battery is active material, we are not responsible for your any misuse or related accidents . The buyer should take charge of all the risks start from purchasing Black Dragonfly products . If you don't agree with this clause , you can return back our products immediately .Don't use any other brand chargers or devices for our batteries .

(1) Installation guide

1.Check battery

- (1) Check package before you take out battery .
- (2) Check if there is any broken or leaks on the shell and parts of battery .
- (3) When get full of charge , check each battery voltage is equalized

2.Cautions

- (1) Avoid battery get short circuit during installation , in case any damage and hurt .
- (2) The battery should be installed in a well-ventilated place, and should not be installed in a damp or

water-soaked place.

(3) When installing the battery, do not exert too much force or exceed the prescribed torque, otherwise it may cause damage.

(4) Do not touch the remote control when installing the battery.

3. Battery installation

(1) Clean the battery installation position to ensure that there are no metal or other foreign bodies.

(2) Fasteners should be fastened during installation to prevent the battery from falling off.

(3) When test the drone ,observe whether there is any abnormal condition .

(2) Battery Maintenance

1. If the battery is not used for a long time, it is recommended to maintain the battery once every 15 days;

2. In normal use, if the battery endurance decreases significantly or the unit cell difference exceeds 50mV,we advise maintain the battery.

3. In the maintenance mode, the charger uses low current to charge, discharge and balance the battery, so that the voltage of each battery unit can be adjusted to about 3.85V.

(3) Cautions

- Do not hit the battery hit when handling.
- Do not short-circuit the battery or will cause serious damage.
- Do not transport or store batteries with metal at any time.
- Do not knock, throw, tramp, puncture, disassemble the battery.
- If the electrode is dirty or rusty, it should be cleaned in time, otherwise it may lead to battery damage or poor contact and function failure.
- Please use the special charging device for Black Dragonfly UAV battery. Do not use any other charger.
- Do not overheat the battery cell at any time.After the temperature of the cell is as high as 60°C, there will be safety risks, or even combustion.
- Do not disassemble the battery and reassemble or change the wiring. It is dangerous to reassemble one piece of battery cell with another group of batteries after disassembling.
- Do not directly touch the battery with leakage. If the electrolyte is splashed on the eyes or skin accidentally, please wash with water immediately. In serious cases, please seek medical advice immediately.

Before charging / discharging battery

- Please check the battery voltage and electric quantity carefully before charging or using.
- Do not over discharge or overcharge the battery (the voltage of each cell after discharging is not less than 3.3V and not higher than 4.25V),over discharge and overcharge is easy to damage the battery.
- Use a clean wet cloth to clean the battery shell and connector, and dry cloth to wipe the water stains.Do not use tools that are easy to generate static electricity, and do not use corrosive organic solvents, otherwise the battery will be damaged.

Battery in charging /discharging

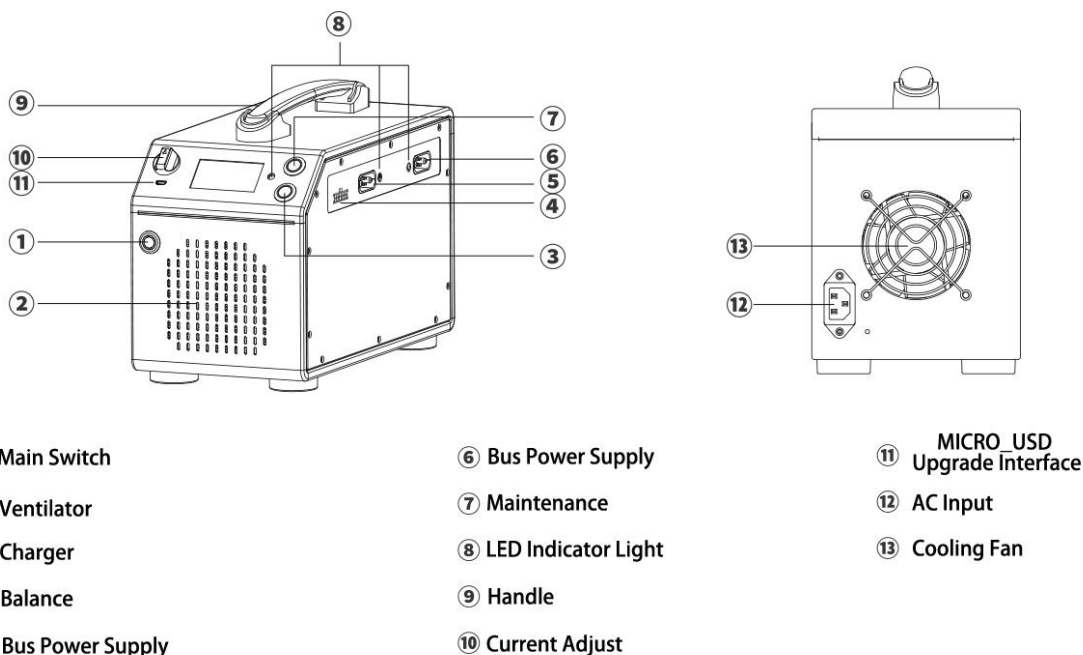
- When charging, the battery should not be accessible or placed directly on a flammable material.
 - Do not charge unattended, please charge in the temperature of 0-45°C.
 - When the drone is operating at low temperature, the battery working time should be reduced to ensure flight safety.
 - When the drone is spraying, the battery power socket should be closed to prevent the liquid from entering the battery through the socket.
 - If collision occurred in use, please take out the battery. Please carefully check whether the battery and connectors are normal.
- Caution: the battery may be too hot to touch.

Battery in storage

- Please keep the battery out of reach of children.
 - Do not put the battery near an open flame or heater or other fire source.
 - Please ensure that the battery is stored at room temperature around 25 degrees Celsius.
 - Do not put the battery near the liquid. When not in use, it should be stored in a cool and dry environment.
 - If the battery is not used for a long time, the storage voltage should be controlled between 3.8-3.85V per cell.
- Please ensure that the battery is activated once in half a month to maintain the stability of the battery.

9) Charger Maintenance and Cautions

(1) Parts Name



* ④⑤ charger nozzle and balance nozzle are for the same group battery

⑥ is an independent nozzle without balance nozzle, reverse side is the same .

(2) Operation Instruction

1. Start and self inspect

Check all the wiring connections—confirm all is right—turn on main switch on charger—LCD screen 和 LED indicators will on light—At the same time, the buzzer is turned on. When the buzzer ends, the charger completes normal startup and self inspection.

2. Work mode instruction

Charging mode: In this mode, the battery can be charged in a fast and balanced way;

Maintenance mode: when the battery is not used for a long time, it is recommended to maintain

The battery once every 15 days; In normal use, if the battery life is significantly reduced or the cell difference exceeds 50mV, it is recommended to carry out maintenance operations; In the maintenance mode, the charger will use a small current to charge, discharge and balance the battery, so as to adjust the voltage of each battery unit to between 3.84-3.86V.

Continuous working mode: when the charging steward is connected, the host will automatically recognize and switch to continuous working mode.

3. Work current setting

According to the battery capacity and actual use requirements, flip the current selector switch to the corresponding gear to complete the current setting

4. In charging

Long press the charging button for more than 2 seconds, then enter into the charging mode or start

automatic charging after connecting for 10 seconds;

The red light is always on: it means the charger is charging the battery, and the display screen shows the detailed status of charging in real time;

The green light is always on: it means the battery has been charged;

Press any key to stop charging. Note: In the continuous working mode, the main machine will automatically stop, detect, switch channels and other actions, which can be performed by the main intelligence without human intervention. After the user presses the button to stop the machine, If the battery is not removed within 30 seconds, the battery will be recharged.

5. Maintenance

Press Maintenance button for over 2s enter into maintenance mode .

1). The red light is always on: it means the battery is being maintained by the charger, and the display screen shows the detailed status of maintenance in real time;

2). The green light is always on: it means the battery maintenance has been completed;

3). Press any key to stop maintenance.

Note: In the continuous working mode, the main machine will automatically stop, detect, switch channels and related actions, which can be performed by the main intelligence without human intervention. After the user presses the button to stop the machine, if the battery is not removed within 30 seconds, the maintenance is resumed.

(3) Cautions

1. Do not put our products in direct sunlight, rain or humid environment.

2. This product should be away from heat source, high voltage, water, flammable gas, corrosive and other dangerous goods; Be sure to use at a suitable ambient temperature (5°C~45°C is recommended).

3. The product shall be placed on a horizontal table, and it is forbidden to tilt or shake; Be sure to leave enough ventilation distance around (Recommendation: 50cm) to ensure that the product is well ventilated when working.

4. Do not cover the product radiator or battery with items during operation; Also do not place the battery on the radiator.

5. Do not charge non-rechargeable lithium batteries with different sections or specifications.

6. During operation, equipment and batteries should be placed on the surface of strong resistance, anti-flammability and anti-conductor. It is forbidden to place them on car cushions, carpets or similar objects.

7. Do not attempt to use more than the operating voltage specified in the manual; The number and type of battery must comply with the Settings.

8. Do not charge and discharge the battery that has been physically damaged.

9. Do not pull out the input wire during the work. Please pull out the battery in time after the work is completed.

10. If there is a foreign body attached to the metal terminal, please wipe it with a dry towel.

11. Refitting or disassembling the product is prohibited.

12. Do not use this product in thunderstorm weather.

13. Children under 14 years old are not allowed to use the charger to avoid accidents.

14. Before connecting the battery, do not break the battery, do not short circuit the positive and negative poles of the battery, do not disassemble and install the battery by yourself, so as to avoid danger.

15. Be sure to be guarded during the use of this product.

16. In case of fire, please use the dry powder fire extinguisher correctly to extinguish the fire. There is danger of electric shock if you use the liquid type fire extinguisher.

(4) Charger Maintenance

1, thank you for buying our company's charger, Wenzhou Black Dragonfly UAV Technology Co., Ltd. will do our best to provide you with perfect after-sales service, fully protect your rights and interests, if your products fail, please contact Wenzhou Black Dragonfly UAV Technology Co., Ltd. after-sales staff.

1) The warranty expiration date after product failure shall be the date reached to the after-sales service center of Wenzhou Black Dragonfly UAV Technology Co., Ltd.;

2) Within one year from the date of purchase, due to the quality of the product itself, all the maintenance is free. If the customer cannot provide a valid proof of purchase, the internal date code will prevail;

3) If the period exceeds one year from the date of purchase, the cost will be charged as appropriate, and the user shall bear the round-trip transportation expenses by himself;

4) Please be sure to leave your contact information when you send it for repair, so that you can be informed in time after repair.

2. The product can not be used normally due to the following reasons, which is not within the scope of warranty:

1) Damage caused by not using it correctly according to the instructions;

2) Failure to connect the correct voltage as required, resulting in product damage;

3) The product is damaged due to man-made, accidental impact or other force majeure;

4) Damages caused by water immersion, dampness or other foreign matter entering the product;

5) Aging, bruising and scratches of the product surface shell;

6) Refit, dismantle or modify the internal circuit of the product without permission of the Company.

10) Flight Control

Flight control system is the core component of the drone system. Its performance affects the flight performance and flight quality of the drone, and is directly related to the flight safety of the drone. Therefore, the understanding of the flight control system is the basis for the implementation of operations.

(1) Power Supply System Instruction

V2 type flight control power module supply power range: 6S—12S;

RTK Power supply range of base station: 6S—12S;

RTK Power supplied by the board card: 3S—12S;

Power supply range of water pump module: Input DC 24V, Output DC 12V;

(2) Protection Scheme

Return Course: Returning course is one of the important protective means of safe flight. The course of returning course is as follows: after the plane climbs 2 meters at the current position (the default can be modified), it flies to the safe point and hovers for operation;

Remote Control out of control protection: From the perspective of safety, the current remote control is still irreplaceable for plant protection drone. In order to ensure the safety of drone flight, and for the actual demand of large area self-spraying, the more complete remote control safety protection strategy is designed. The protection of out of control of the remote control can be set on the ground station software, the setting is designed only for "full autonomous mode, manual mode (high/fixed mode) and ab mode are default open and cannot be closed ;

Data link fault protection: In order to improve the ease of use, we set the ground station as a non-synchronous necessary device, which means that during the actual flight of the drone, the state of the drone can be observed through the ground station, or the data link can be disconnected, and the working condition can be determined by the state of the drone and the indicator light. In order to prevent the data transmission link instability from adversely affecting the actual operation, the data link fault protection is set to be effective only in the full autonomous mode and the remote control signal is lost;

Low Voltage Protection: We provide voltage protection based on the modifiable voltage value, that is, the user can correct the voltage value measured by the flight control via the ground station (if there is a difference between the actual value and the measured value, the measurement value can be corrected by this function), the flight control detects the single-chip voltage and implements the protection;

Area Limit Protection: In some specific cases, it is necessary to limit the flight range of the drone. our system provides flight restrictions of two-dimensional and three-dimensional space, namely height and distance limits, to ensure the safety of the drone flight.

(3) Flight Mode

Flight Control Mode	Control Type	Characteristics	Remark
Altitude Hold Mode	Remote Control	When the joystick is returned to the center, the drone will maintain its attitude, and the throttle can be set to a height, but it cannot achieve precise fixed-point hover, so manual correction is required	
Position Hold Mode	Remote Control	If the satellite signal is good, it can hover with high precision and achieve speed limit	
GNSS Assist Mode	Remote Control	If the satellite signal is good, it can hover with high precision and achieve speed limit	
Course Reverse Mode	Remote Control	Rely on satellite, fly from current position back to home and hover	
Auto Control Mode	Automatic	Auto fly based on the set route on ground station, but it rely on satellite	Throttle can control height, put throttle in middle can hold height
A/B Point Mode	Semi-Auto	Semi auto fly based on set A,B point, but it rely on satellite	Throttle can control height, put throttle in middle can hold height

(4) Indicator Instruction

No.	RGB Status	Fault Status	Instruction
1	All lights are not working		Line fault or light fault
2	All lights are on working,but ground station cannot connect	System Halted	
3	Red light and white light twinkle alternately	Initialize Flight Control	
4	Red,yellow,blue and green light twinkle alternately in low light	Drone need to be calibrated	Remote control, compass,accelerometer
5	Red,yellow,green twinkle alternately	Drone need to be calibrated or tested	Motor test , electrical adjust calibration
6	Yellow light single twinkle	Remote control fault	
7	Yellow light double twinkle	Battery in low voltage	
8	Purple light single twinkle	Compass fault	
9	Purple light double twinkle	Accelerometer fault	
10	Purple light fast twinkle	Fault before unlock	Gyroscopes are not healthy
11	Red light keeps on	Appender fault	
12	Red light and yellow light twinkle alternately	GPS fault	
13	Blue light single twinkle	Unconnect GPS,unlock	blue light is on ,means no fault
14	Blue light keeps on	Unconnect GPS, locked	
15	Green light single twinkle	Already connect GPS, unlock	Green light is on, means no fault
16	Green light keeps on	Already connect GPS, locked	
17	Green light fast twinkle	GPS is in high precision positioning	

(5) Flight Test

Electrical Calibration

The purpose of electrical calibration is to make the output PWM value of the flight control match the PWM value range that can be received by the electrical adjustment. Conventional electric calibration methods are as follows:

turn on remote control, make the accelerator to the highest position;

turn on flight control, flying light is red and blue flashing, means flight control get into the electrical calibration model, turn off flight control, keep remote control accelerator always on the highest position;

turn on flight control again ,connect electricity to power system, when hear an electrically controlled "di - di" sound, rapid pulled the throttle to the lowest, at this time will hear a long sound "di",

At this point push the throttle again, motor will be in rotation, electrical calibration will be in end .

During electrical calibration , it must be in the state of no paddle. The prompt sound of different manufacturers' electric adjustment may be different. Please refer to the manual of electric adjustment.

Accelerometer Calibration

When our flight control leaves the factory, the acceleration has been calibrated. In general, there is no need to calibrate it again, but in some specific cases, the acceleration needs to be adjusted to ensure the stability and flight safety, the calibration method is as follows:

- enter into "equipment calibration - collectively" page, click on the "calibration" button;

- according to clew, put drone/flight control on horizontal level;

- click button, according to clew,put drone/flight control on the left side;

- click button, according to clew,put drone/flight control on the right side;

- Our Flight Control System User's Manual

- click button, according to clew, put drone/flight control head down;

- click button, according to clew, put drone/flight control head up;

- click button, according to clew, turn over drone/flight control;

- When it tells calibration is success, means calibration is end,we can restart flight control.

Horizontal Correction

The horizontal correction function mainly solves the installation error, when the flight control is installed on the rack, and repairs the horizontal error caused by human installation.Place the Orbiter in horizontal.

In the "Equipment Calibration -- Level" page, click "Horizontal Correction" to complete the correction.

Voltage Correction

Read the real value of the battery through the voltage measurement tool, and write the actual value directly, click “confirm”.

Magnetic Compass Calibration

Magnetic compass calibration makes aircraft heading more accurate. When flying in different environments and regions, magnetic compass needs to be recalibrated to ensure flight control adapt local magnetic environment, our flight control magnetic compass calibrate method is as follows:

- fast slide "channel mode" switches above 6 times, when the status of indicator light flashing in red, blue, means have been into the level of magnetic compass calibration mode;

- turn the drone on horizontal and gently rotate 360 °, when green light keeps turned on, means horizontal calibration is completed;

- Put drone head straight down, waiting to twinkle red light and green light cycle, said it enters into vertical magnetic compass calibration mode;

- Again put drone gently rotate 360 °, when indicator light stops flashing, blue lights stay turn on, vertical calibration is completed.

Unlock and Lock

Unlockable mode: Altitude hold /GNSS assist/position hold mode

Lockable mode: Altitude hold /GNSS assist/position hold mode

Unlock method: Maximum pitching, minimum throttle volume, heading right full lever, roll left full lever, indicator light turns flashing to normal, that means it has been unlocked;

Unlock request:

When altitude hold mode are self-inspected ,means it has been unlocked ;

GNSS assist/position keep mode, the satellite is positioning, light will be on green and single flash;

Lock method:

Maximum pitching, minimum throttle volume, heading left full lever, roll right full lever, lock immediately, the indicator light will starts flashing, means lock is successful;

FCC Warning Statement Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.