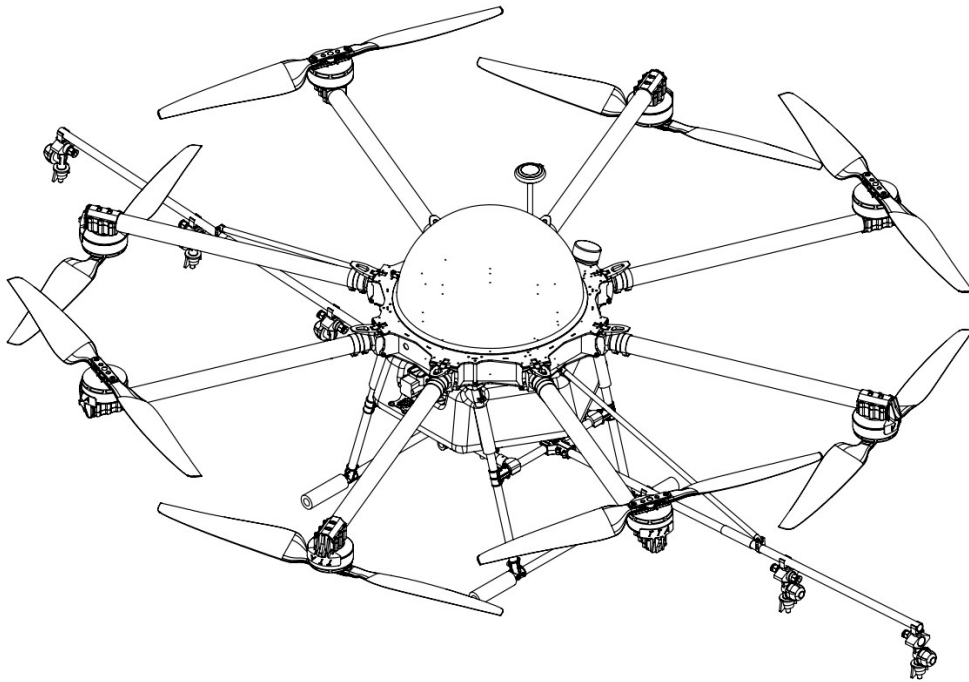


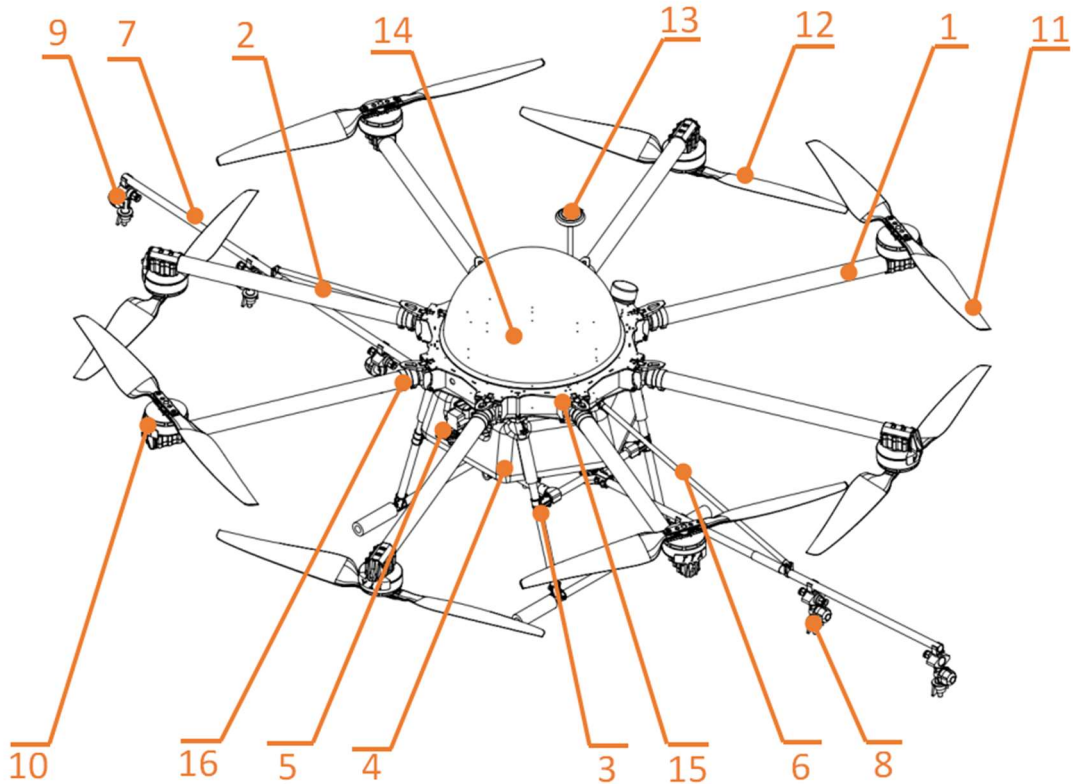


Beijing TT Aviation Technology Co., Ltd.

M8A pro Manual



Beijing TTA Aviation Technology Co. Ltd.



M8A20A1 structural diagram

| No. | Component | No. | Component |
|-----|---------------------------------|-----|----------------------|
| 1 | CCW Arm assembly | 9 | Edge nozzle assembly |
| 2 | CW Arm assembly | 10 | Motor |
| 3 | Landing gear assembly | 11 | CCW Propeller |
| 4 | Water tank | 12 | CW Propeller |
| 5 | Pump assembly | 13 | GPS antenna |
| 6 | Holder assembly of spraying rod | 14 | Dome |
| 7 | Spraying tube | 15 | Up plate |
| 8 | Middle nozzle assembly | 16 | Arm joint jacket |



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1. Use Instruction

1.1 Safety Instruction

- ♦ The product is not suitable for the ones who are less than eighteen or who do not have full capacity for civil conduct.
- ♦ The product have bigger fuselage size, high speed rotary and strong flight dynamics. At runtime have a certain dangerousness . Not in accordance with the requirement operation and usage will cause to potential danger and hurt.
- ♦ When using this product, please keep away from airport, railroad, high speed road, high buildings ,electric wire and other dangerous environments.
- ♦ When using this product, please keep away from mobile phone base stations, high power transmitting equipment, and other high electromagnetic interference environments.
- ♦ When using this product, please keep away from army and kinds of manned craft flight area.
- ♦ Don't use this product in rain, thunder, sandstorm, fog snow ,high wind ,and low temperature and other bad environments.
- ♦ When flying in more than three kilometers. Environmental factors can lead to flight performance degradation, please care of using it.
- ♦ When operating this product fly in low sky .Please always keep UAV and people & animals in a safe distance of ten meters
- ♦ When using this product in desert area, please keep UAV within the range of operator's eyes
- ♦ Don't hover or fly over the crowd, Don't be delight in scaring others.



- ♦ When it is close to the crowd ,please land this UAV as soon as possible and guide people to keep and avoid potential accident.
- ♦ Don't operate it in the area of children playing.
- ♦ If not in the extreme necessary condition, please do not power off when flying in the air.
- ♦ You can not fly it you are in drinking , tired, drugs, physical ,discomfort, etc. .
- ♦ Please inspect it before using very time, including but not limited to parts of fastness, organism and propeller of cracks, and abrasion ,battery ,the effectiveness of light. When error happens, please stop using immediately and replace the corresponding parts.
- ♦ Abnormal working state of the UAV maybe happen accidentally, don't open the propellers and forcibly fly with wrong.
- ♦ Do not try to prevent the moving parts while working.

1.2 Pesticide Usage

- ♦ All pesticides are poisonous. Please be careful and work strictly according to the safety instructions of pesticides.
- ♦ When dispensing, please use clear water. If not, will cause jams mesh of impurities. If it is blocked, please clear it before reuse
- ♦ When dispensing , please note that liquid sparks and the pesticide residue in fuselage will be harmful to human body.
- ♦ When dispensing, please pay more attention and use protective tools, and do not let body directly touch with the pesticides; After pesticide spraying, please clear your skin, copter and remote control.
- ♦ When using pesticide, there will be interaction between different pesticides , user should



clear cartridge or keep a certain interval time。

- ◆ Spraying shall be carried out in windless sunny day, don't spray under high temperature at noon. While breezing, the operator should be standing above the wind and spraying; do not work when wind is four.
- ◆ When spaying ,if you feel uncomfortable ,headache or dizzy, please leave the site at once and rest. If once severe symptoms occur, immediately be sent to hospital.
- ◆ Pesticide effect and the solution concentration, spray rate ,copter high from crops ,wind direction, wind speed and so on are close related. When using pesticide should consider the above factors, to achieve the best effect. Please make sure that do not damage the human beings and animals and surroundings during the process of sprayings.
- ◆ When using pesticide , do not pollute river and drinking water

1.3 Inspection

- ◆ Before flying, ensure the battery is enough
- ◆ Ensure all the parts are installed firmly, and all the screws are tight as required.
- ◆ Ensure all the wires are correctly linked.
- ◆ Ensure all parts goes well. If it is broken or aging, please replace timely.
- ◆ Before flying, carefully check the propellers installation direction、 rotation direction, control and others.
- ◆ Ensure all the propellers are fine, no any scratch and tightly installed.
- ◆ Ensure the sprayer is fluent without any clogging and work normally.



1.4 Environment

- ◆ While flying, please ensure the drone away from the crowds, dangerous goods, high buildings, high-voltage wires and others. Please fly the drone in a dedicated space.
- ◆ Please ensure the drone fly within the operator's eyesight.
- ◆ The drone working temperature is between 0°C-40°C.
- ◆ Ensure the drone fly within the permit of local law and regulations.
- ◆ To fly the drone safely as required, please fly it within in the height of 50 meters. If it has local flying height limit within 50meters, please make sure obey the related regulations.

1.5 Operation

- ◆ Please ensure the multi-rotor drone flying height is within 8 meters, except the special requirements.
- ◆ Before remote control calibration、 hardware update, parameter setup, please remove the propellers and avoid the potential moving suddenly.
- ◆ Remove the battery if it does not fly, to avoid flying it when touching the remote control once.
- ◆ Please remove the batteries once landing. Do not move the drone when it is in power.
- ◆ Do not touch the joy stick mistakenly, and prevent start the drone.
- ◆ When it is powered, please stand in the safe distance of above 10 meters.
- ◆ Ensure the propellers completely stop and power off.
- ◆ Please switch it to the manual operation mode when errors happen. Please keep away from the crowd.
- ◆ When the battery is damaged, please ensure it is stored in the disposal area and avoid



spontaneous combustion. In order to protect environment, please don't throw batteries randomly. And consult the maker about the proper disposal method.

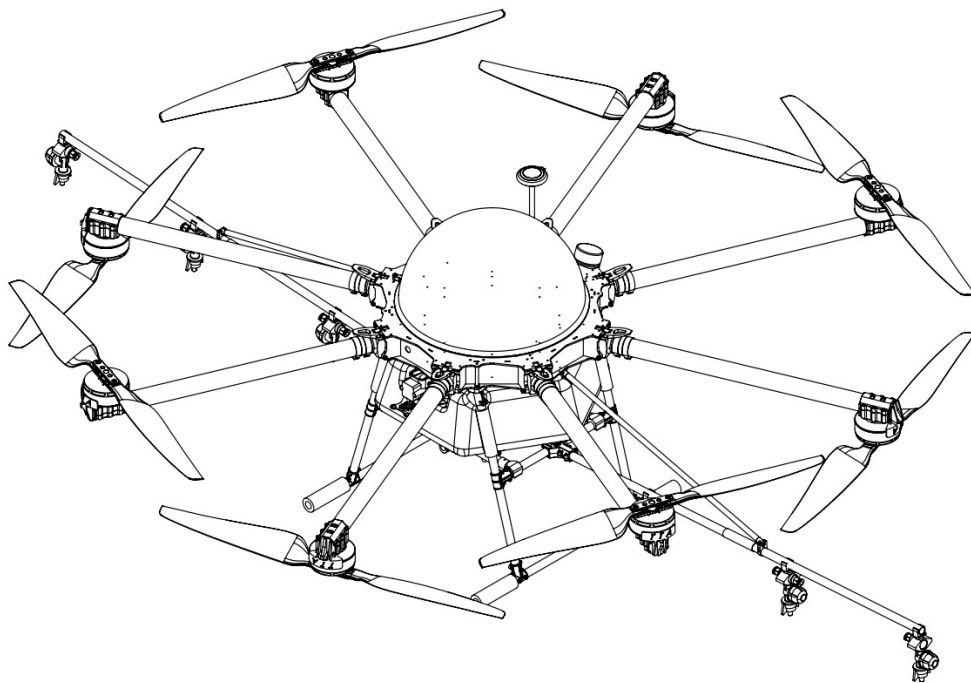
- ♦ During the flight, don't fly overload and do not cause any potential dangers.
- ♦ When low battery is warning, please return as soon as possible.
- ♦ Ensure that the remote control and battery is enough, to ensure that firmware has been updated to the latest version.
- ♦ Ensure flying sites outside of the restricted areas and is proper for flight . .
- ♦ Please make sure do not fly or operate the drone when you are drunk or with medicine limitation.
- ♦ Be familiar with the remote control operation & each flight mode, and ensure you know how to operate the control condition.
- ♦ User shall know and obey all the law and regulations in flying location.

1.6 Compass Calibration Requirements

- ♦ Compass has to be calibrated before using the first time. If else, it cannot work and will affect flying safety. Calibration tips:
- ♦ Please do not calibrate it in the place close to the high-magnetic field or big metal materials, such as high-voltage, magnet, parking lot, concrete iron building, etc.
- ♦ When calibrating, please do not bring the magnetic materials, such keys and cellphone.
- ♦ If it is calibrated indoor, please do not re-calibrate it outdoor. It prevents that the two magnet differences cause the potential flying data errors.
- ♦ Magnetic field location is different, please make sure re-calibrate when it changes to the place far away from the previous one.

2. Product Introduction

M8A20A1, the multi-rotor UAV, is the most economic integrated solution for all the agriculture spraying services, the product series payload is up to 20kg. This UAV uses carbon fiber material, the saving weight could be used to payload. The big power brushless motor guarantees the sensitiveness and flexibility. The Lipo batteries guarantee the power supply and easy to repair and maintain. Various spraying tests prove the best performances of this UAV for many years.



2.1 Flying Parameters

| | | | |
|------------------------------------|----------------------------------|---|---------------------|
| Copter weight (without battery) | 18 KG | Max pitch angle | ≤35° |
| Standard take off weight | 46 KG | Best working speed | 4-6m/s |
| Max effective take off weight | 48 KG | Max working speed | 10m/s |
| Max thrust weight ratio | 2.43(take off weight 46Kg) | Working time | 10-15min /sortie |
| Dynamic battery | 16000/17000mAh *4pcs | Max ascending speed | 5m/s |
| Max power consumption | 18400W | Max descending speed | 3m/s |
| Hovering power consumption | 5400W | Max flying speed | 15m/s |
| Hovering time | empty≥25min full≥6min | Recommended working environment temperature | 10-35C° |
| Hovering accuracy | horizontal±1.5m vertical±0.5m | Max wind resistance | 12m/s |
| Working height | 2-4m | Max flying altitude | 3500m |
| Max rotation angle | 360° | Best reserving temperature | 10-25C° |

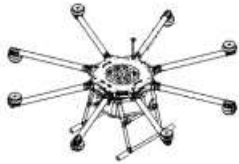

2.2 Copter Parameters

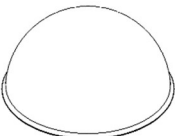

| | | | |
|-------|-------|--------------------|--------------------------------------|
| Frame | Frame | Diagonal Wheelbase | 1630mm |
| | | Arm Length | 632mm |
| | | Unfolded Height | 600mm(top shield 200mm not included) |
| | | Folded Height | 710mm(top shield 200mm not included) |

| | | | |
|-----------------|------------|--------------------------------|----------------------------|
| | | Folded Width | 570mm |
| | | sprayer supporter length | 3180mm |
| | | Sprayer Distance | 500-550mm(adjustable) |
| dynamic system | Motor | Motor Model | TTA8017-2 |
| | | Stator Size | 75mm |
| | | KV | 120KV |
| | | Max Thrust | 14KG |
| | | Max Power | 2300W |
| | | Weight | 640g |
| | ESC | Max Continuous Working Current | 80A |
| | | Max Peek Current(3s) | 120A |
| | | Max Allowed Voltage | 14S LiPo |
| | | Working Voltage | 12S (44-50.4v) |
| | | Working Pulse Width | 1000-2000us |
| | | Compatible Signal Frequency | 50-400Hz |
| | | Drive PWM frequency | 400Hz |
| | Propellers | Material | Carbon fiber |
| | | Diameter /Screw pitch | 3080(length 760mm) |
| | | Weight | 110g |
| | Battery | Capacity | 16000mAh/17000mAh |
| spraying system | Water Tank | Payload | 20L |
| | Sprayer | Model No. | pressure type(hollow cone) |
| | | Quantity | 6 pcs |
| | | Sprayer Diameter | 0.67mm |
| | | Spraying Speed | 4--6m/s |
| | | Spraying Volume | 1.8--2.2L/min |

| | | | |
|-------------------|-------------------|---|-----------------------|
| Remote controller | Remote controller | Spraying Width | 5--8m(up to height) |
| | | Spraying Droplet Diameter | 80--200μm(adjustable) |
| | | Type | R3 |
| | | Working frequency | 2.4Ghz |
| | | Signal effective distance(without interference and block) | 800m |
| | | Battery capacity | 3.7V,3000mAh |
| | | Charging type | direct |
| | | Working environment temperature | 0-40C° |
| | | Reserving environment temperature | 10-25C° |
| | | Best charging environment temperature | 10-25C° |

2.3 Packing List

| Name | QTY | Image |
|-----------------------|-------|---|
| Fuselage | 1pcs |  |
| Spraying rod assembly | 2 pcs |  |

| | | | |
|---------------------------------|-----------------------------|--|---|
| Dome | | 1 pcs |  |
| Propeller | | 4 pair |  |
| T8FG remote controller | | 1 pcs | |
| M8A20A manual | | 1 pcs | |
| A4 adhesive sticker print paper | | 1 pcs | |
| Spare part | Tools box | 1pcs | |
| | TTA spanner | 1 pcs | |
| | LiPo battery charger | 1 pcs | |
| | Electric quantity indicator | 1 pcs | |
| | spare screw | M3*8 cylinder head 5 pcs M3*8 half round head 5 pcs M4*60 cylinder 2 pcs M4*65 positioning bolt 2 pcs | |
| aviation box | | optional | |
| 16000mAH/17000mAH battery | | optional | |
| Dual channel 6s charger | | optional | |
| Four channel 6S | | optional | |

3.Preparation Before Take Off

It's very important to the steps of before take off,please check carefully and ensure the copter qualified before take off.

3.1 Device Installation

Parts and lines have been installed well before copter sending out of the factory,please do not change any position of part and line and follow the following steps is enough to work.

3.1.1 GPS Antenna Installation

Step 1:erect GPS supporter,be careful that GPS supporter is vertical to the horizontal direction.

Step 2: tighten the nut on the bottom.

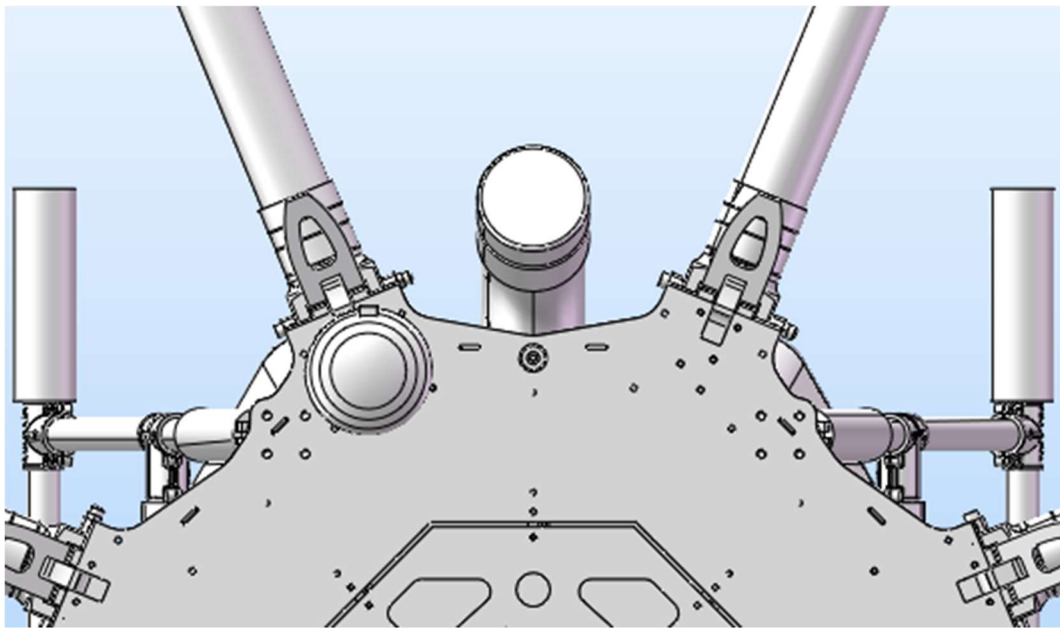


Figure 3-1 GPS installation effect picture

3.1.2 Arm Installation

Use a M4*65 bolt to connect arm and frame and then tighten the bolt and operate the spanner. The other arms are same step.

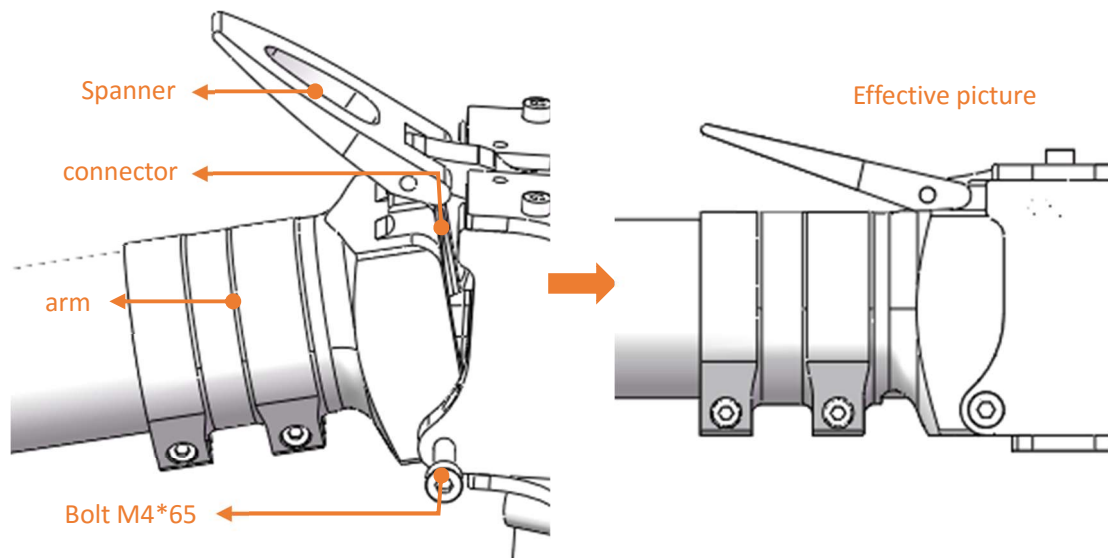


Figure 3-2 arm installation

3.1.3 Propeller installation

Step 1: just the propeller type, CCW or CW.

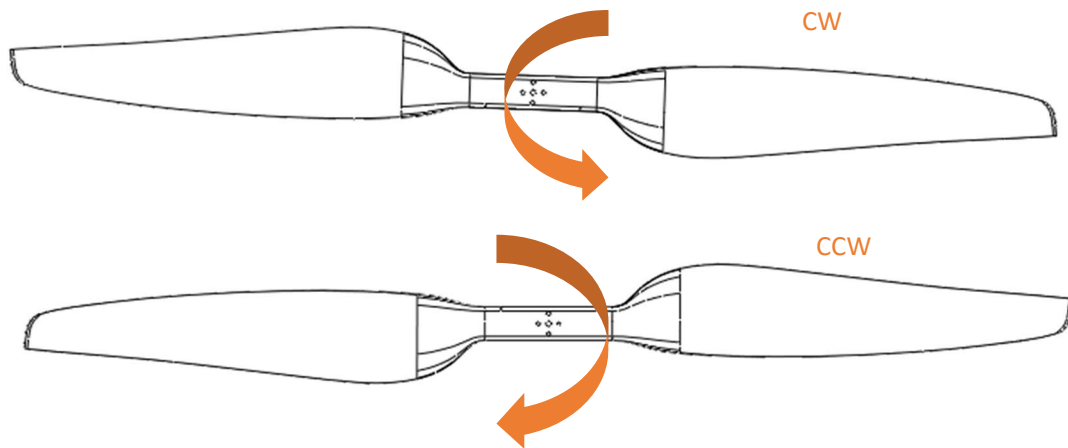


Figure 3-3 propeller type

Step 2: propeller installation,propeller first,then gasket,tighten 2 pieces of M3*14 bolt(M1,M3,M5,M7 is CCW,and M2,M4,M6,M8 is CW).

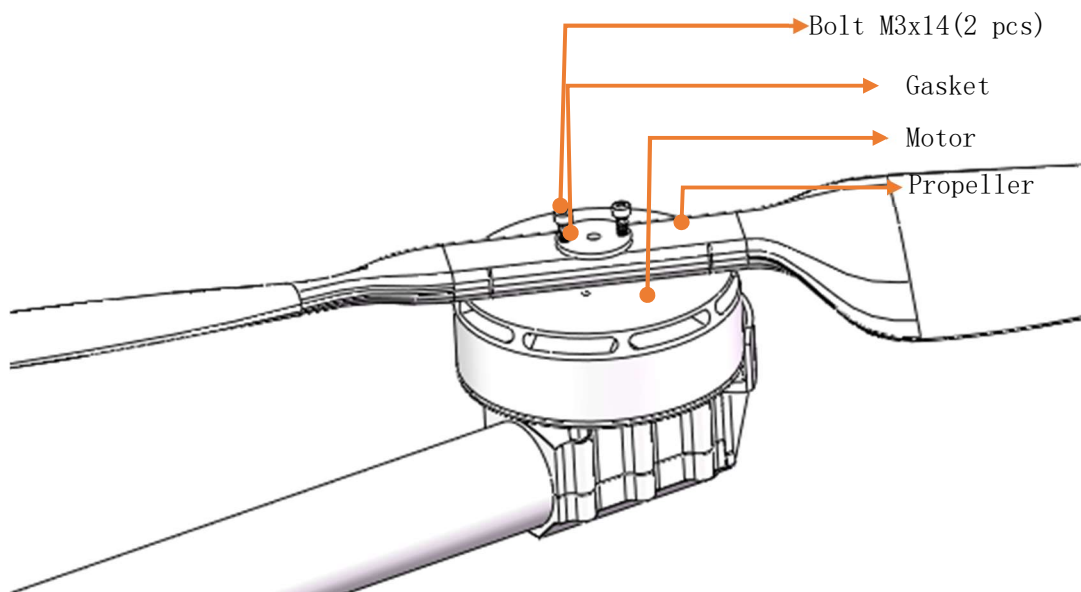


Figure 3-4 propeller installation effective figure

3.1.4 Sprayer Supporter Installation

Step 1: connect the sprayer and its connector,see figure3-5.

Step 2: pin the diagonal member and pin it through.

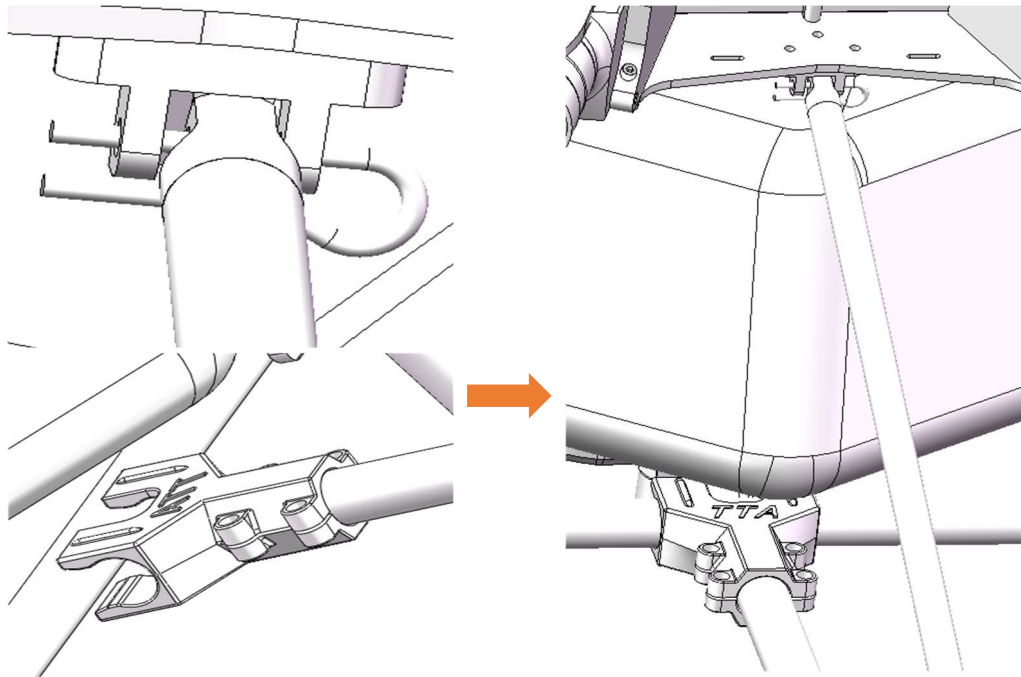


Figure 3-5 Sprayer supporter connection effect picture

Step 3: connect pipe(5mm*8mm) between pump outlet and sprayer, and the other sprayer.

Pressing the connector when loosening the pipe.

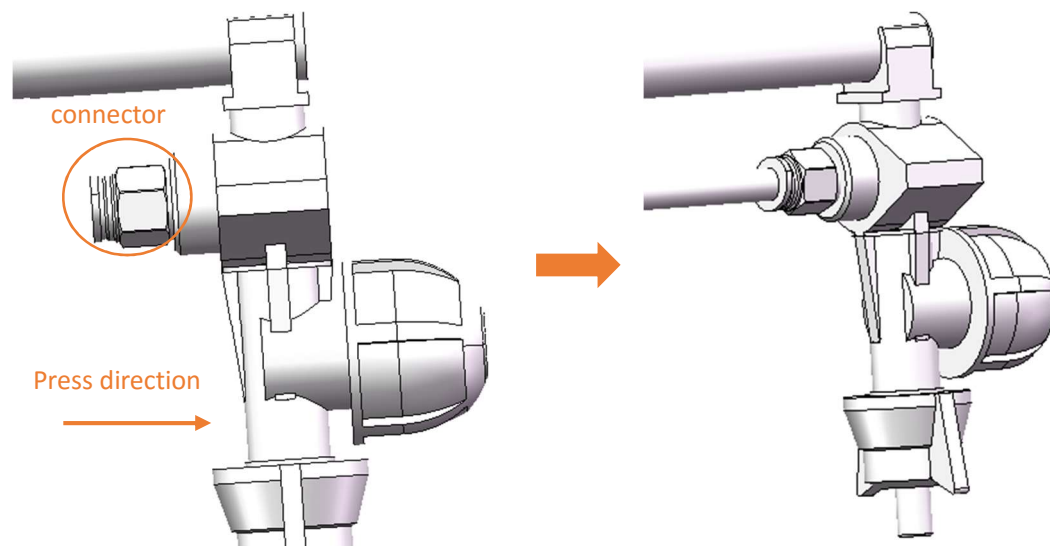


Figure 3-6 pipe connection in sprayer supporter

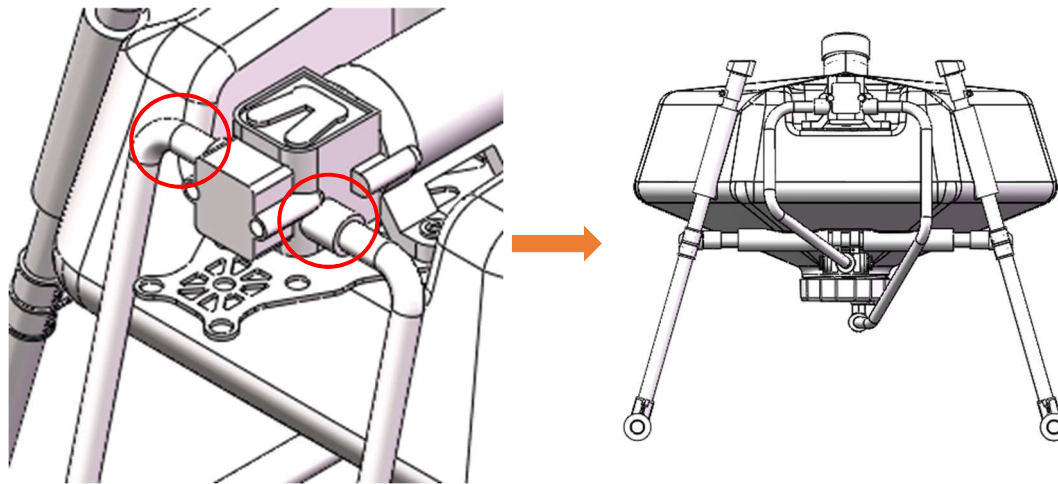


Figure 3-7 pipe connection in pump outlet

Step 4: repeat step 1 to step 3 for the other sprayer supporter.

4. Charger Instruction

4.1 Product Application

LiPo 6s balance charging

4.2 Product Features

1. balance charging
2. quick charging
3. input and output reverse polarity protection
4. Low static power

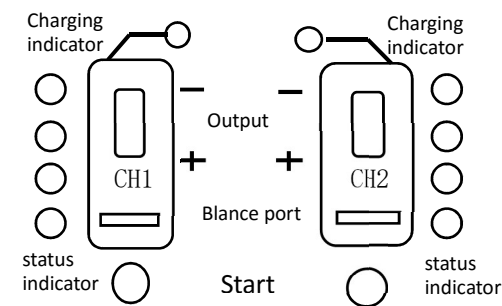
4.3 Main Technical Parameters and Application Demand

1. Input voltage: AC 220V
2. Max charging current: CH1:20.0A;CH2:20.0A
3. Max charging power:CH1:500W;CH2:500W
4. Average output voltage:CH1:25.2V;CH2:25.2V

- 5. Max output voltage:27.0V
- 6.Max balance current:400mA
- 7.Max static power:2400mW
- 8.Display mode:LED display
- 9. Support battery cell number:6S
- 10. Charger working temperature:0~40℃

4.4 Interface Indicator

Dual channel6S-20A charger



| Charging status | Charging indicator | | status indicator | | | | Note |
|-----------------|--------------------|-----|------------------|-------|-------|-------|---|
| | green | red | LED 1 | LED 2 | LED 3 | LED 4 | |
| Idle | ● | ○ | ○ | ○ | ○ | ○ | |
| charging | ○ | ● | Note 2 | | | | |
| full | ⊙ | ○ | ● | ● | ● | ● | charging status:good,balance well |
| | | | ● | ● | ● | ⊙ | charging status:common,balance commonly |
| | | | ● | ● | ⊙ | ⊙ | charging status:poor,balance poor |
| | | | ● | ○ | ○ | ○ | charging module abnormal |

| | | | | | | | |
|----------|--|--|---|---|---|---|--|
| abnormal | | | ○ | ● | ○ | ○ | balance port connection abnormal |
| | | | ● | ● | ○ | ○ | input voltage abnormal |
| | | | ○ | ○ | ● | ○ | output voltage abnormal,check output connection with battery |
| | | | ● | ○ | ● | ○ | single cell high voltage alarm |
| | | | ○ | ● | ● | ○ | battery inspection fail,check balance port and output port |
| | | | ● | ● | ● | ○ | no charging current,check output connection |

Note1: ● → ○ → OFF → flash

Note2: ● → ○ → ● :LED1-LED4 flash in turn circularly,means charging in real time

Fast cycle speed:big electric current change

Slow cycle speed:charging near full

4.5 Function and Operation Instruction

1.Connect with power,leave switch at OFF position,charging channel outside is close,charging indicator is OFF.

2. Connect with power,leave switch on external power,external power supply open,charging indicator is green,charging channel is OFF.

3. Connect with power,press start button for 2s,charging channel is open,charging indicator means current status,charging status is red ON.

4.Press start button during charging process and exit charging mode;press start button when abnormal which means exit abnormal status.

5. It is suggested to charge for a while if not balanced well, which can prolong the lifetime of the battery.

4.6 Attention

1.Over low or high charger input voltage may lead to abnormal status or damage.

2. Please observe the instruction strictly.

5. App Setting of Copter

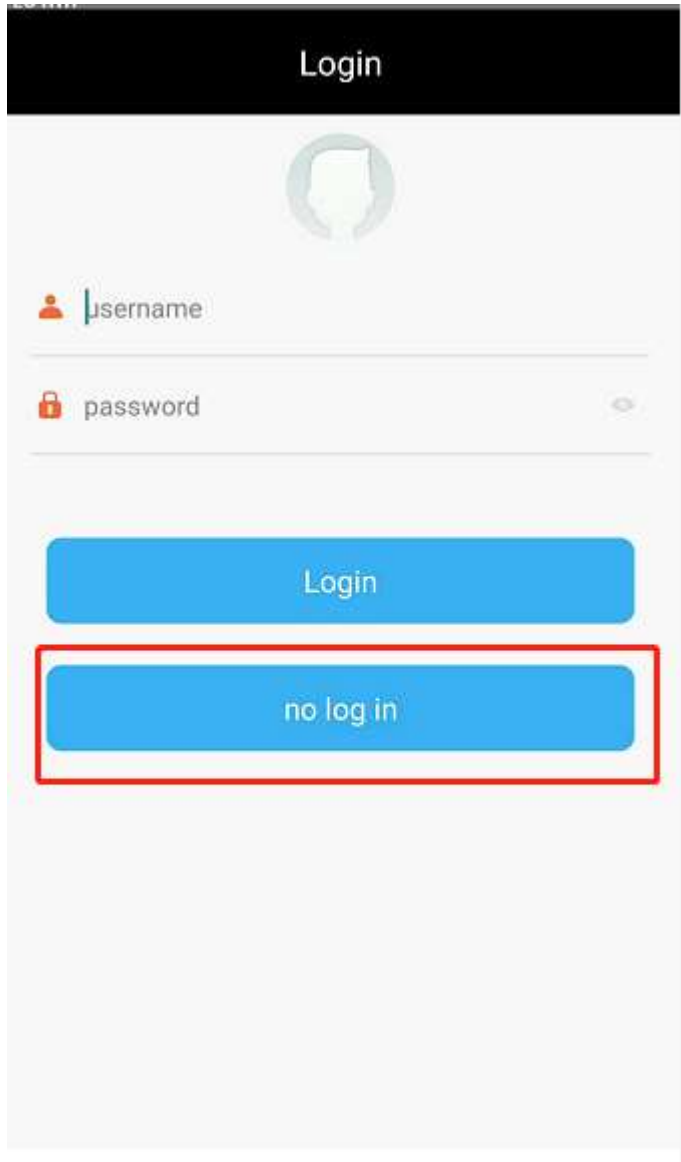


Figure 5-1

Please choose no log in.

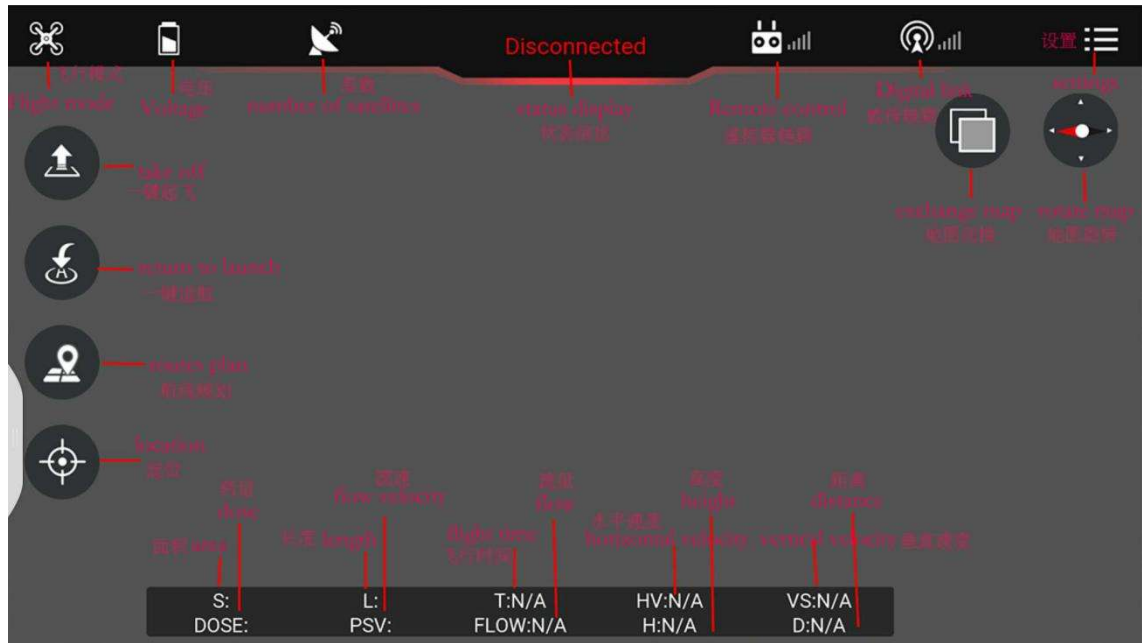
5.1 Software Configuration

1. Please install the GCS software.
2. After GCS installation, the label will be appeared as figure 5-1.



TTA-M6E-1 support Android 4.0 or above

3. Open GCS, enter into the start page.
4. Enter into the main page, see figure 5-2.



5.2 Parameters adjustment

Type 1: Connection by OTG cable

- Sensitivity should not be changed by common user, the unnecessary loss should be taken by user for authorized changing.



- Remote controller could not unlock before parameters adjustment.
- Exit could only be done when all of the parameters adjustment should be done and confirmed. Copter could only fly by restarting after parameters adjustment.

Parameters could be adjusted when copter connected, the steps are as followings:

- 1) Open the OTG function from cellphone SETTINGS---SYSTEM---OTG (the default is Off thus it should be opened every time), see figure 5-2-1.

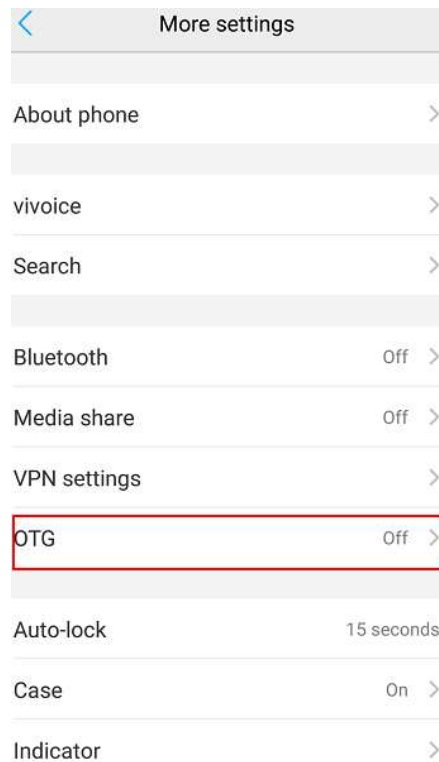

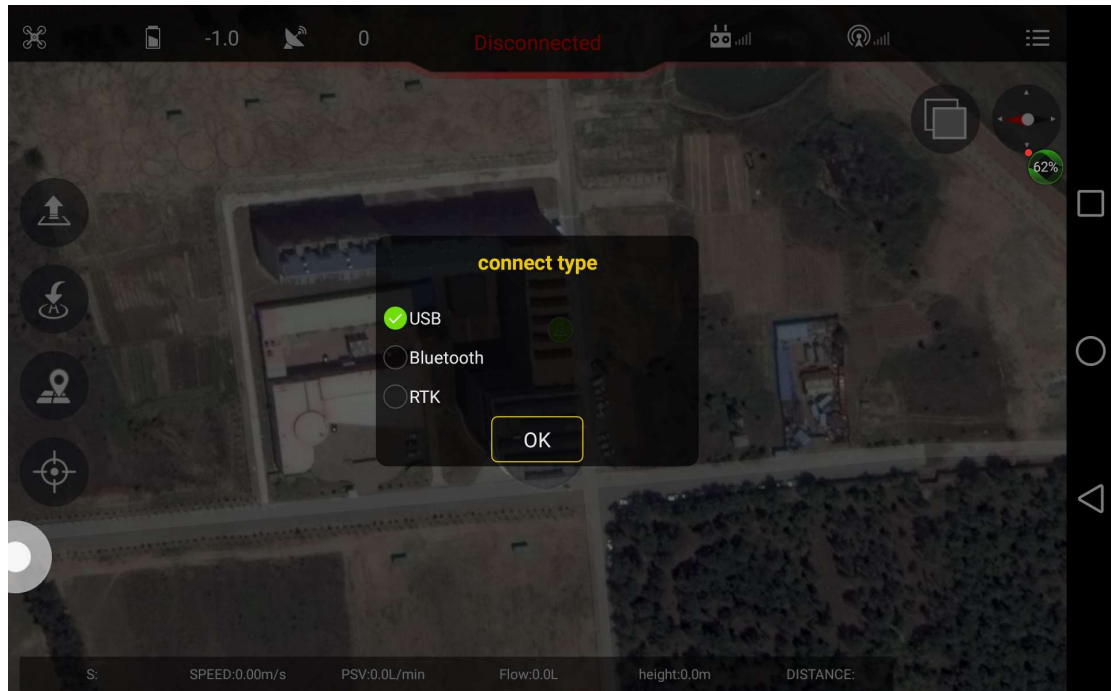


Figure 5-2-1

Connect cellphone with Micro USB port of remote controller. The connection method should be USB, connection label  will be green after connected, see figure 5-3

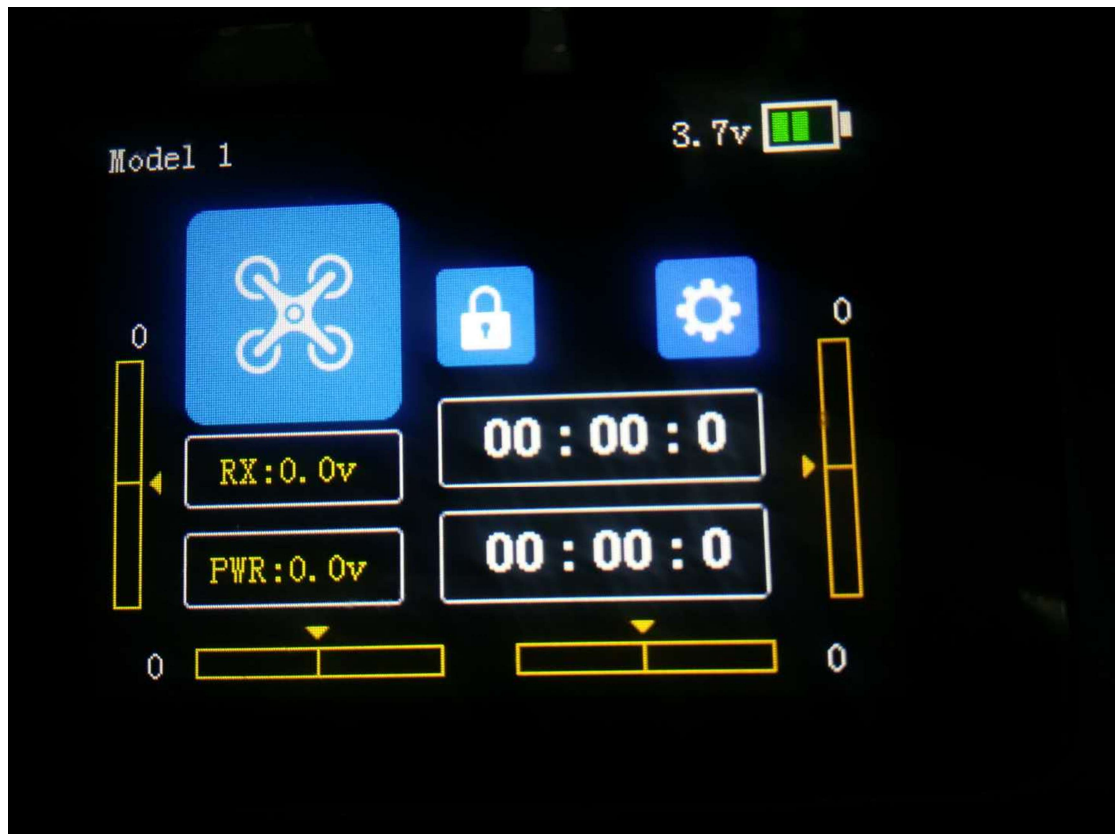


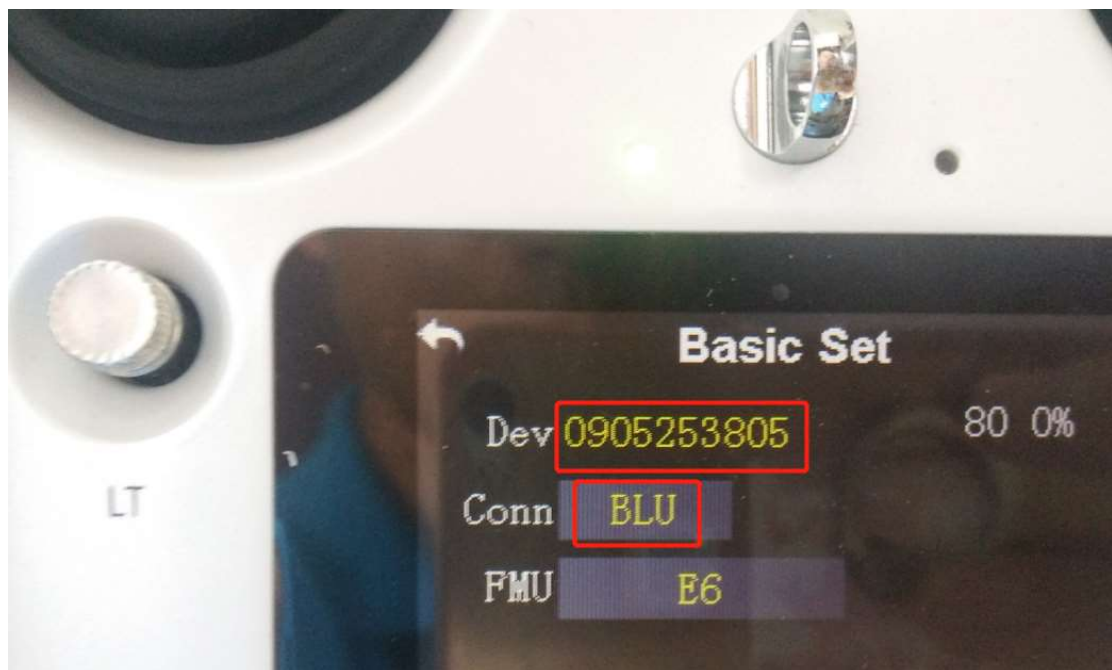
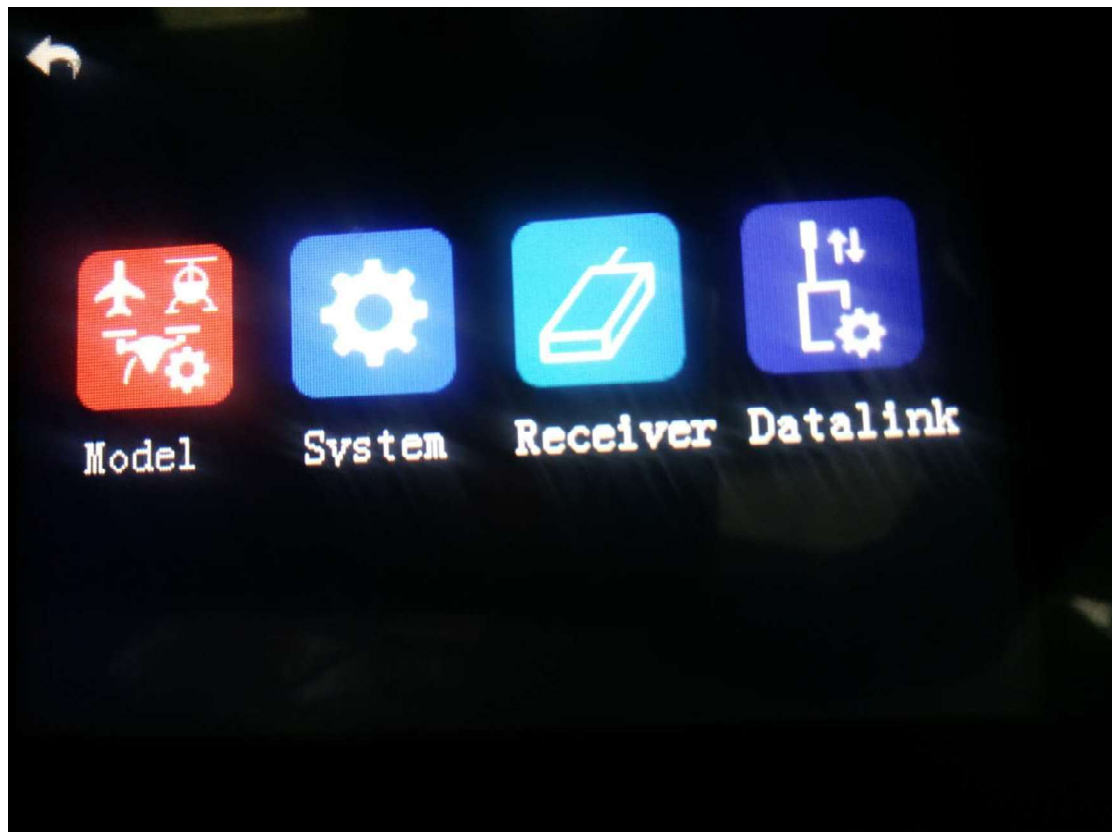
Remote controller should be selected to A-USB, see the following picture:

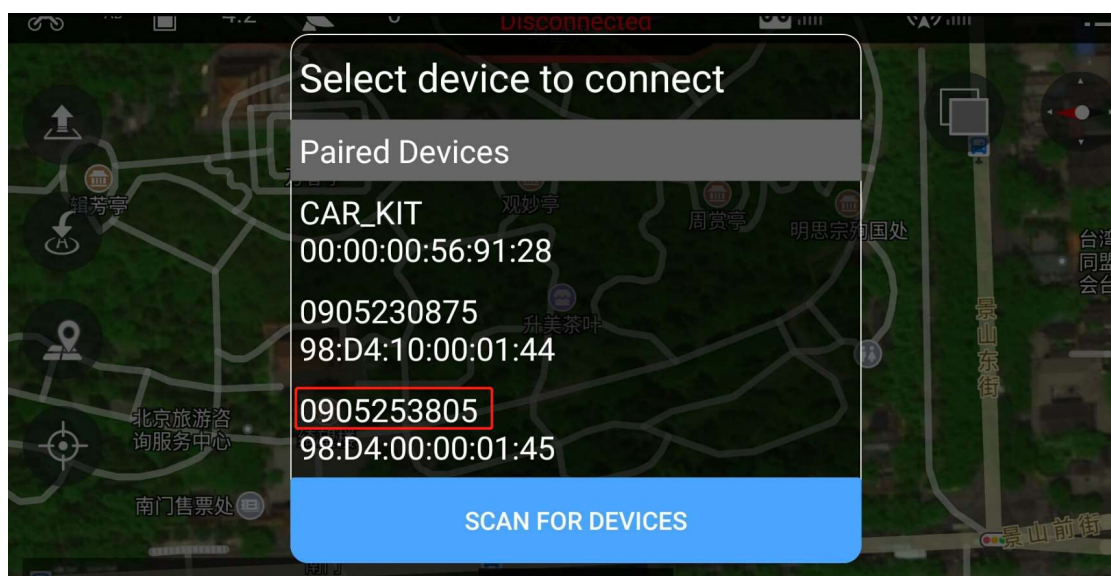


Type 2: Connection by Bluetooth connection:

Open the bluetooth function in cellphone,

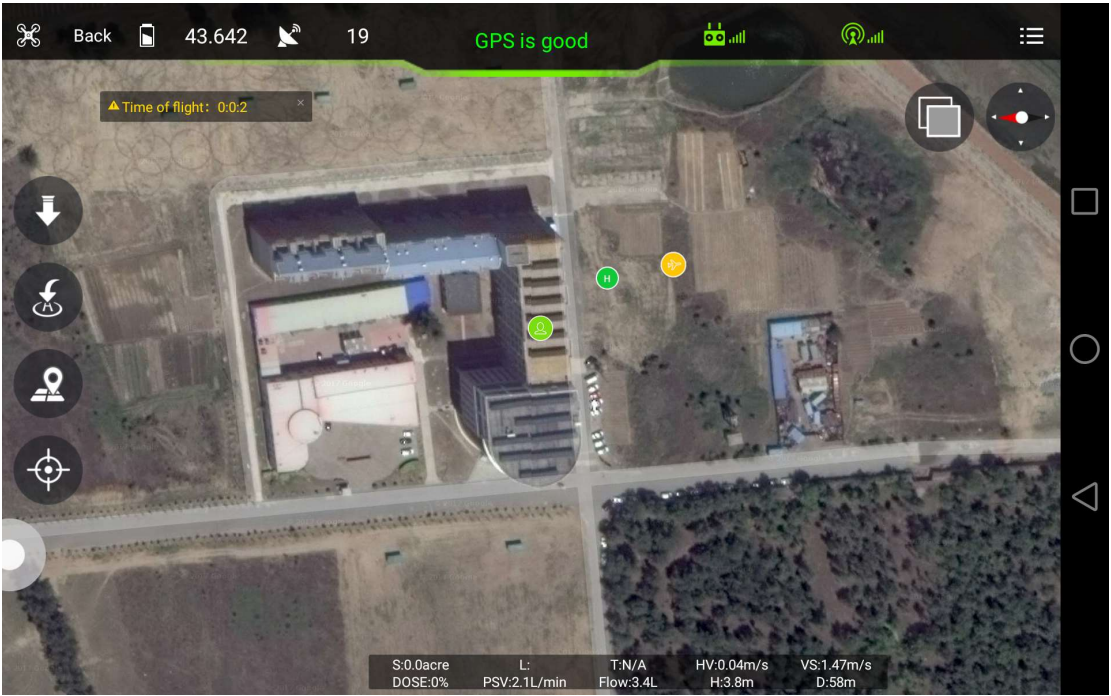







Bluetooth password:1234

After connection,app will be as followings,see figure 5-4



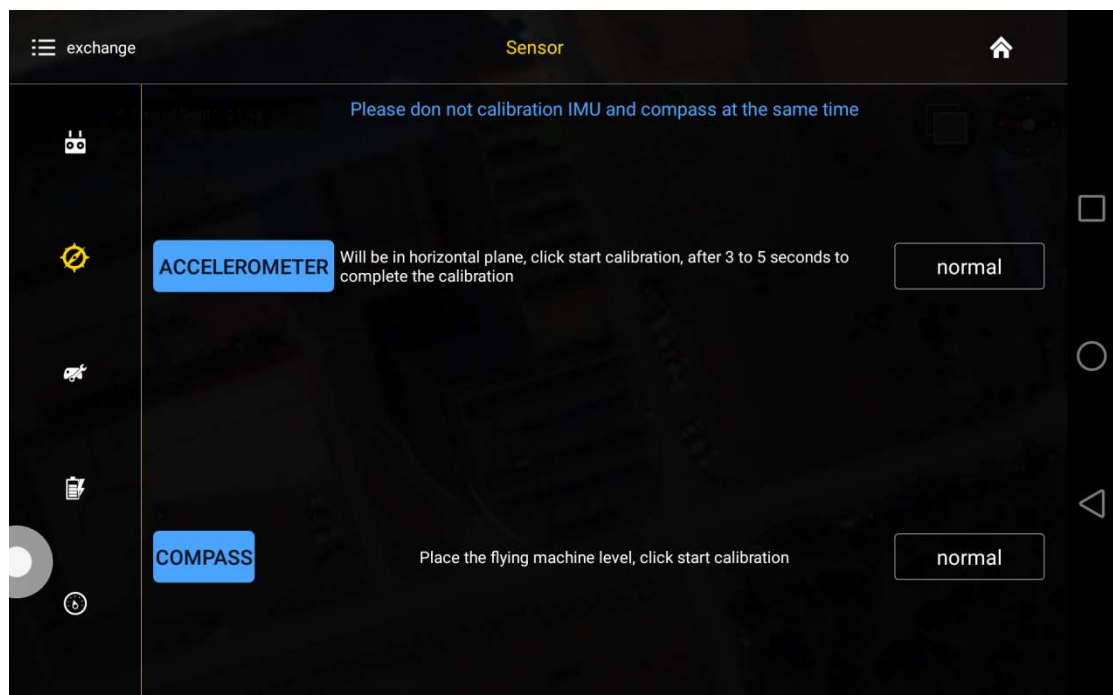
5-4

Click label  at up right corner to enter into parameters adjustment.

5.2.1 Remote controller calibration

Remote controller calibration:click the button *READ* to get the data,see the following figure





- 1) Start to calibrate: connect copter with GCS, click *RC CHANNEL*, move the stick to maximum and minimum position 4 to 5 times.
- 2) Stop calibration: click **Finish** after calibration. Then channel status could be checked.
- 3) Normal or reverse setting of remote controller is set to check whether it's right or wrong.

5.2.2 IMU calibration

Leave the copter in a horizontal position, click the button *ACCELEROMETER*, LED will flash in red, green, yellow alternately, LED *green* means successful calibration, data will be stored by restart.

5.2.3 Compass calibration

Calibration order

Two kinds of method of compass calibration:

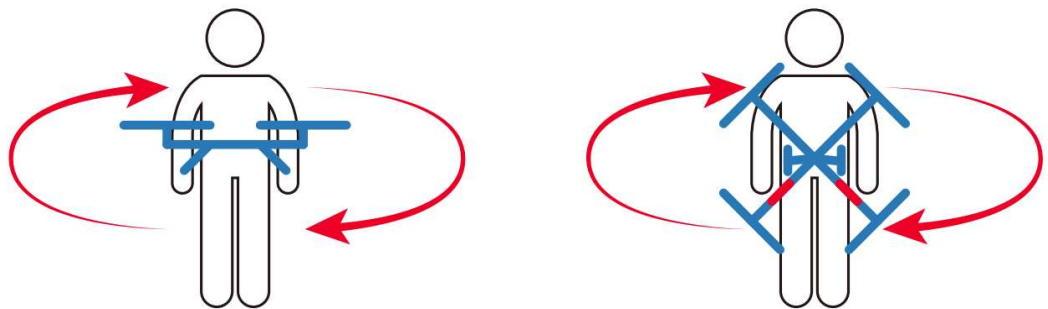
- 1) Click the button *COMPASS* to enter into calibration status.
- 2) Switch switch SA back and forth more than 4 times to enter into calibration status.

Calibration Step

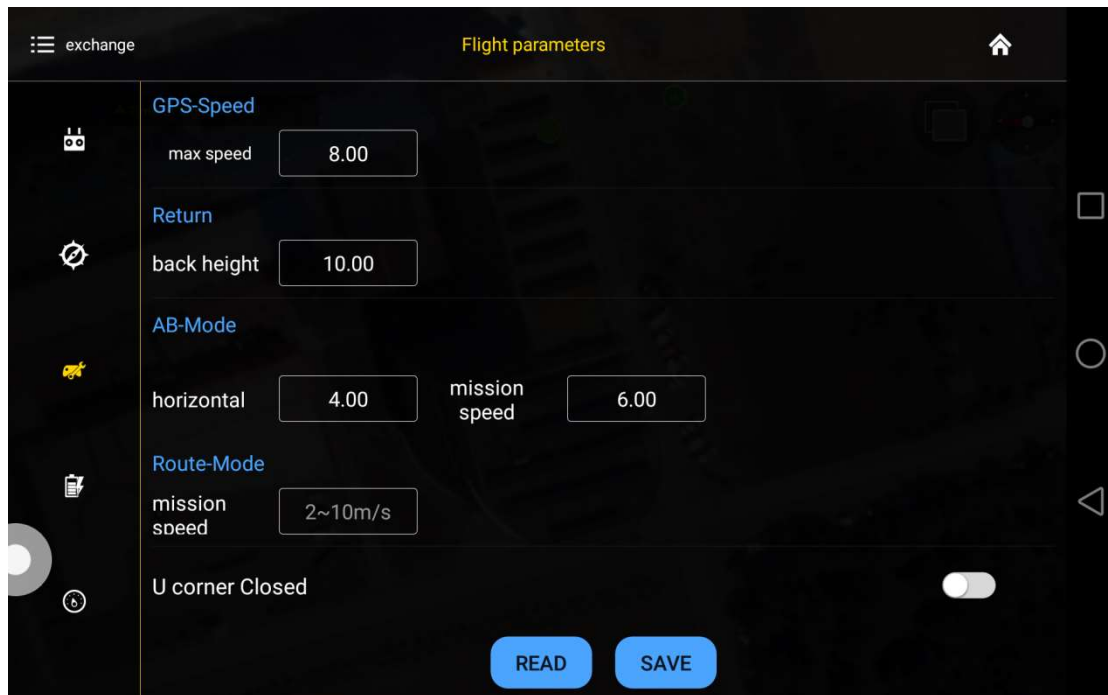
- 1) Confirm GCS communication well, compass installation correct and copter outside.
- 2) Clicking calibration, yellow LED of copter is on, hold and keep copter rotating clockwise and slowly, leave copter head to the ground when green led is on, rotate copter clockwise and slowly till LED flash in red, green and yellow alternately.
- 3) After vertical calibration, calibration mode will be exited automatically and LED will flash normally if successful, LED will keep red for 3 seconds if fails and recalibration should be done.
- 4) Please power again after successful calibration.

Attention :

- 1) Compass should be done after changing flying area.
- 2) Calibration should be done in outdoor, wild and far away from high tension line tower which is easy influenced by magnetic interference.
- 3) Keep horizontal and vertical during the slow calibration.
- 4) Clockwise is the only direction.



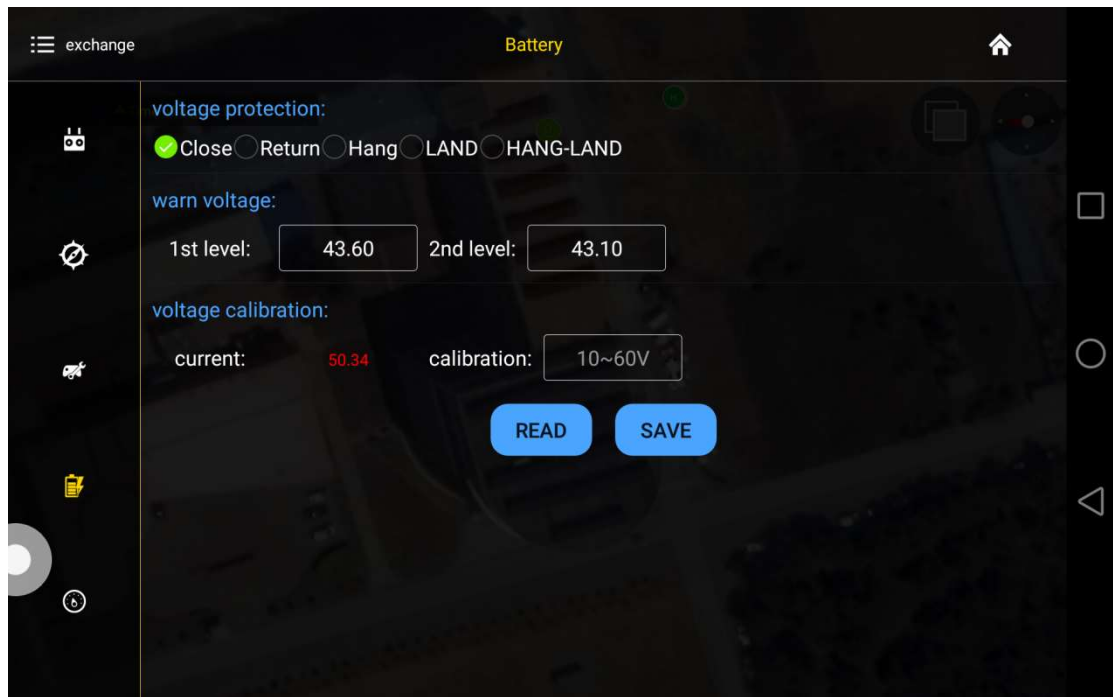
5.2.4 Flying parameters adjustment



Click the button *READ* to obtain the current flying parameters,click button *SAVE* to save the parameters.

The default number of back landing height is 20 meters,AB swath is 4 meters,route speed is 5m/s.

5.2.5 Low voltage protection



5.2.5.1 Low voltage protection settings

Five voltage protection has been provided: close, return to home point, hovering, auto landing, hovering and then landing. User could choose the one suitable. **The default is auto landing.**

5.2.5.2 Alarm voltage settings

Settings of first alarm and second alarm. It's recommended to 43.6V for the first alarm and 43.1V for second alarm.

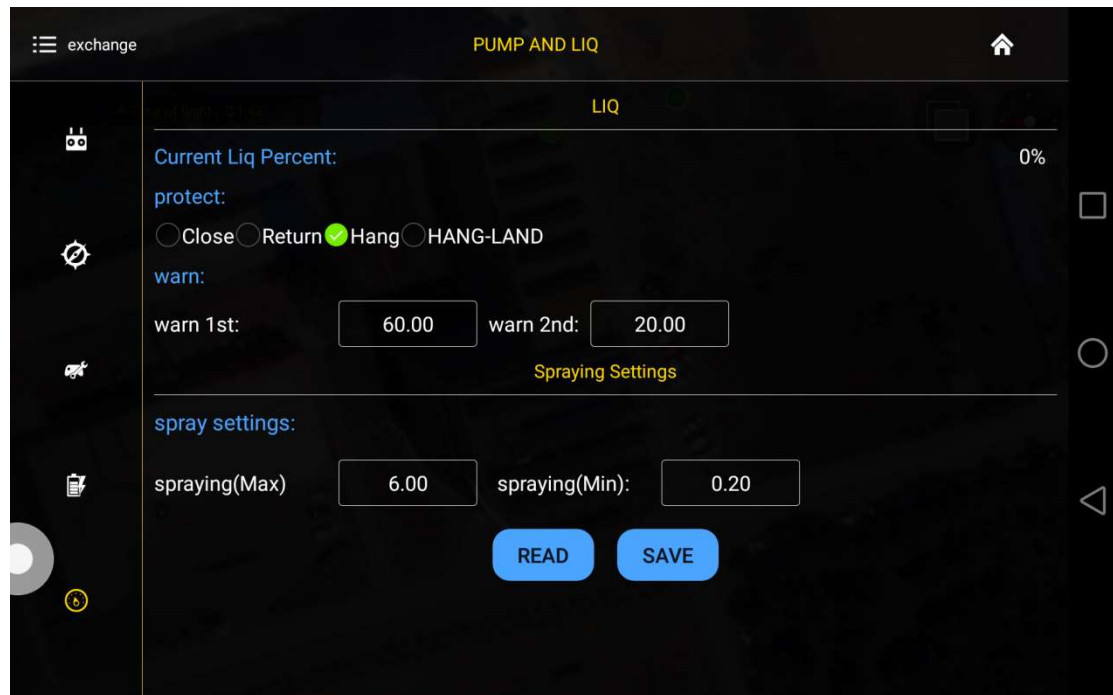
LED will flash yellow triple when get to the first alarm level; LED will flash rapidly when get to the second alarm level, copter will react as the low voltage settings, such as return to home or landing.

5.2.5.3 Voltage calibration settings

Flight controller voltage sensor need to be calibrated if flight controller voltage sensor result is different from real voltage. Real battery voltage should be filled in measured

voltage,flight controller voltage will be calibrated by clicking save. **It's unnecessary to set by user as calibration has been done before delivery.**

5.2.5.4 Pump and liquid level sensor settings



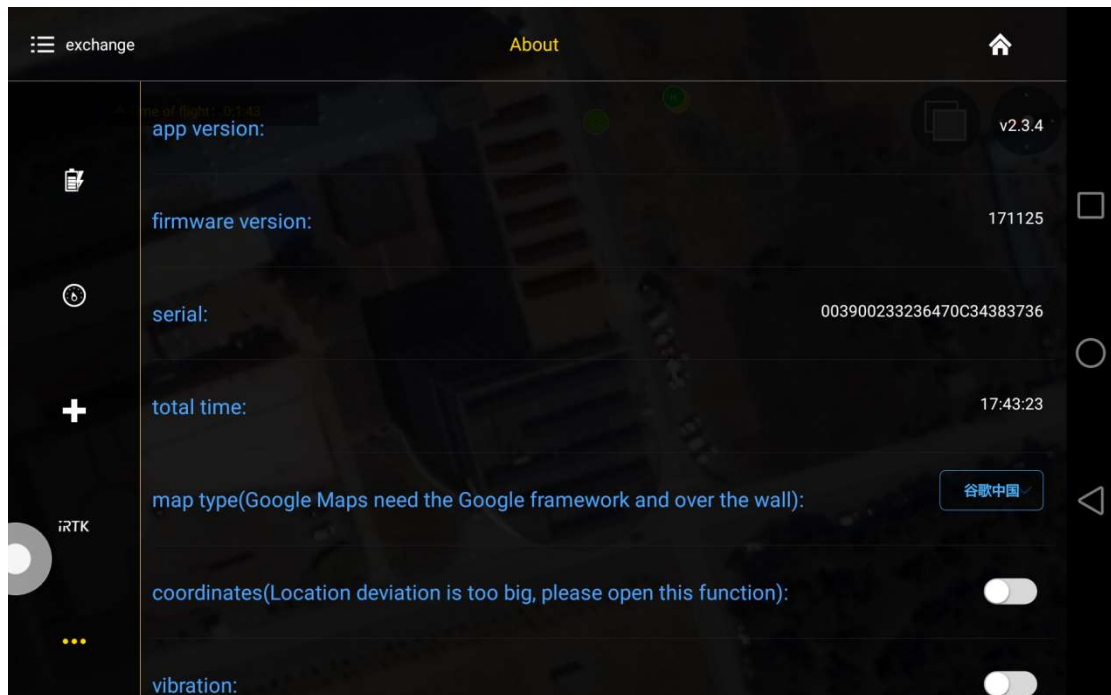
5.2.5.5 Tank empty reaction

The following reaction could be set:close the pump,return to home point,hovering,hovering and then landing.The default is close the pump,which means only LED flash as alarm.

Spraying settings

Combination control of the pump,max flow rate match to max flying speed. The maximum default combination number is 6m/s,minimum default combination number is 0.2m/s.

5.2.6 About interface

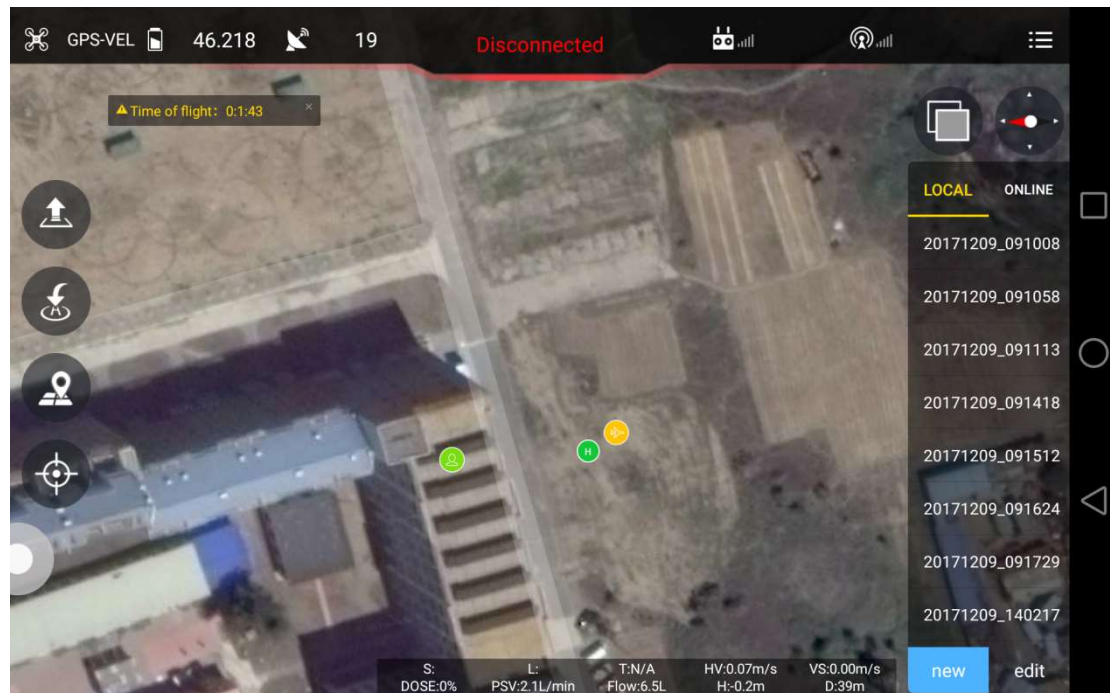


Open about interface,choose **map type**,choose **Google map**.Voice alarm could be opened.

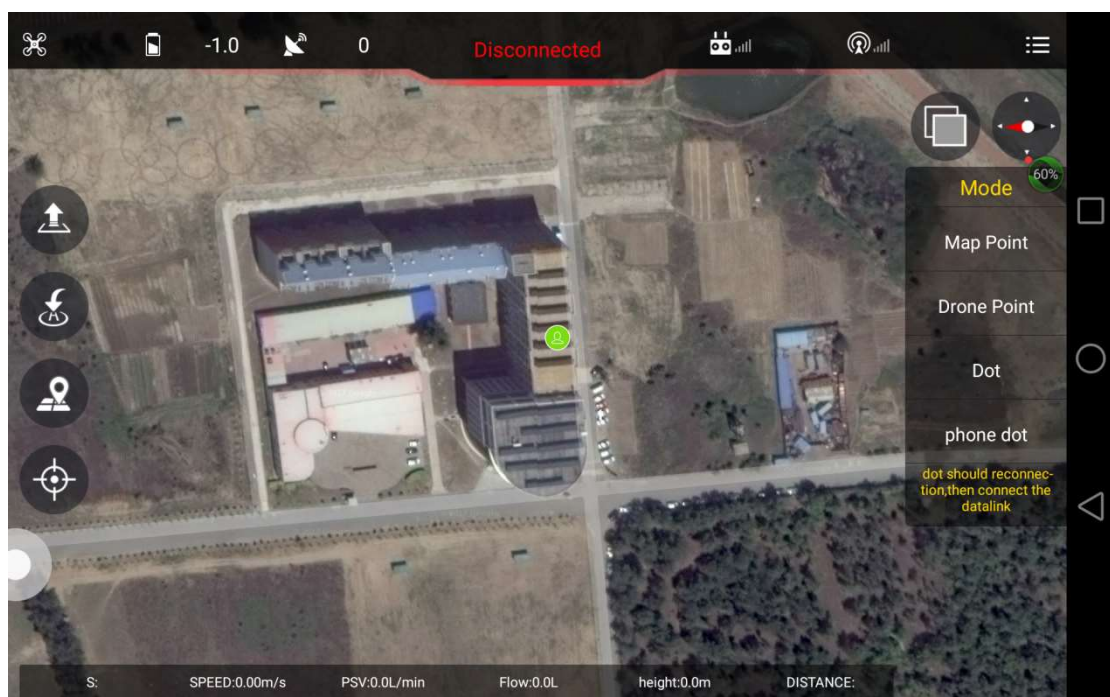
5.3 Route establish

Make point by map,make point by drone,make point by dot equipment,make point by phone.Working area could be done by the followings:

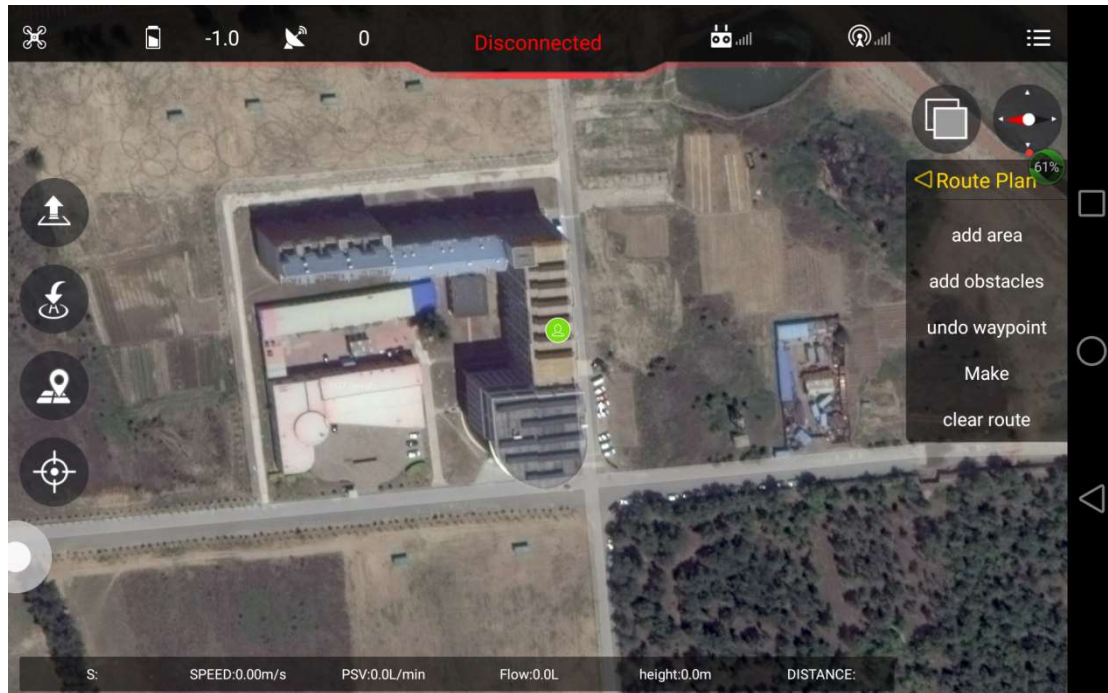
1. Click  to enter into route interface.



2. Click *new* to select point making type.



Making point from map(map point)



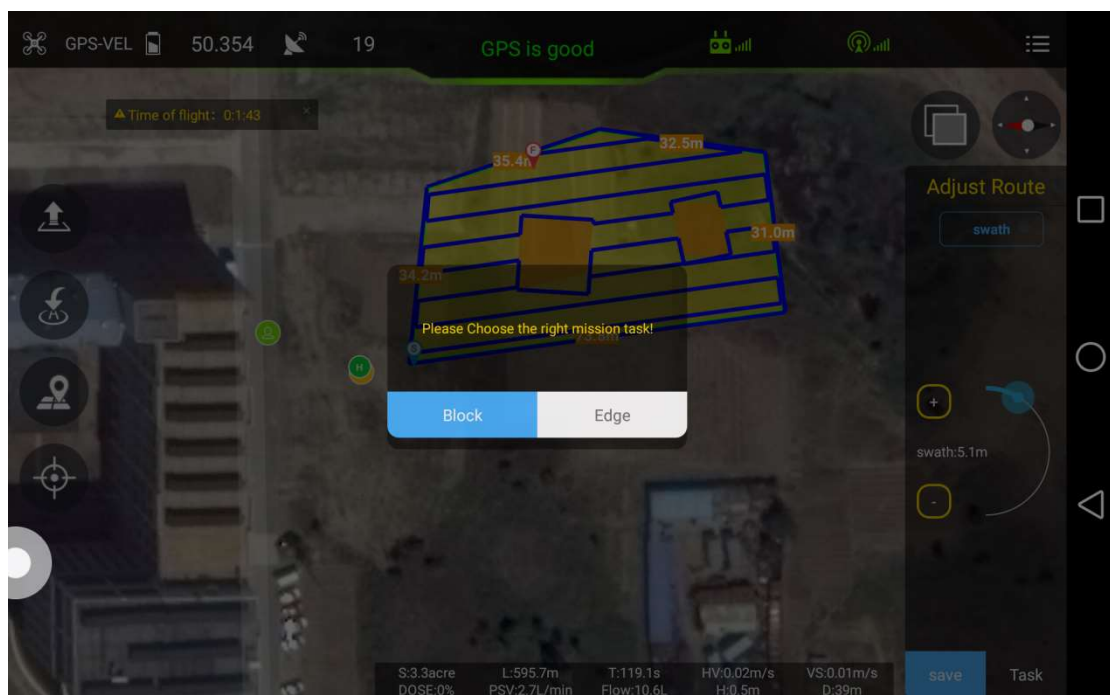
Select *adding area* to choose working area, obstacles could be added by clicking *add obstacles*.




Route can be made after area added.

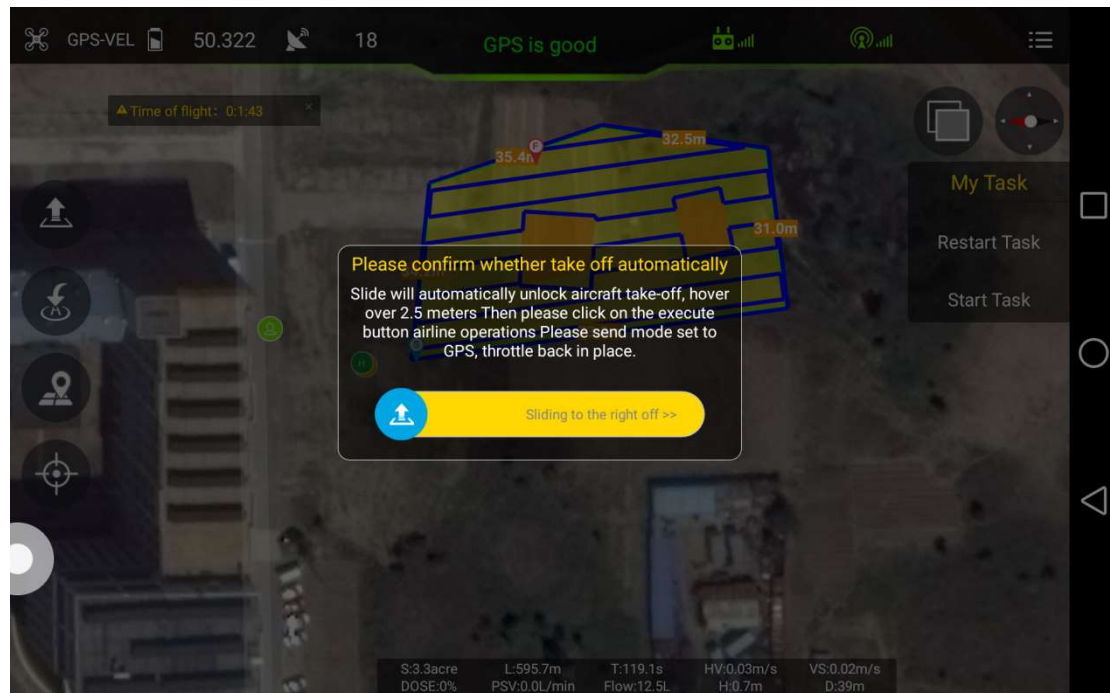


Swath(distance between each spraying),*angle*(angle of line),*obstacle gap*(distance around the obstacle),*target gap*(distance between working area and boundary),*offset*(offset of working area) in *Adjust Route interface*. Task could be saved according to demands, and then upload it by selecting block(working area).





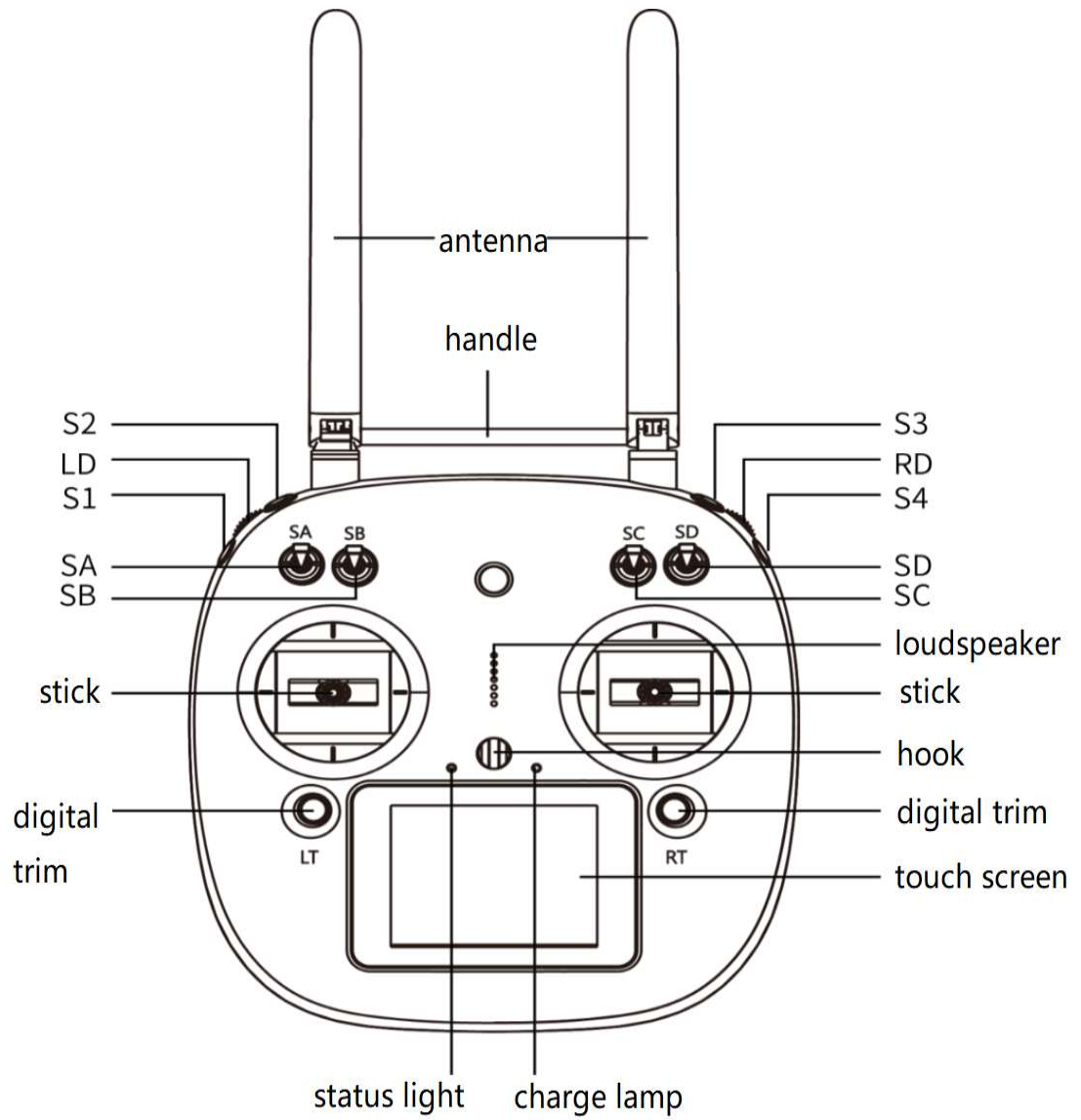
Click  to take off from GCS or remote controller, click *start task* to execute the route.

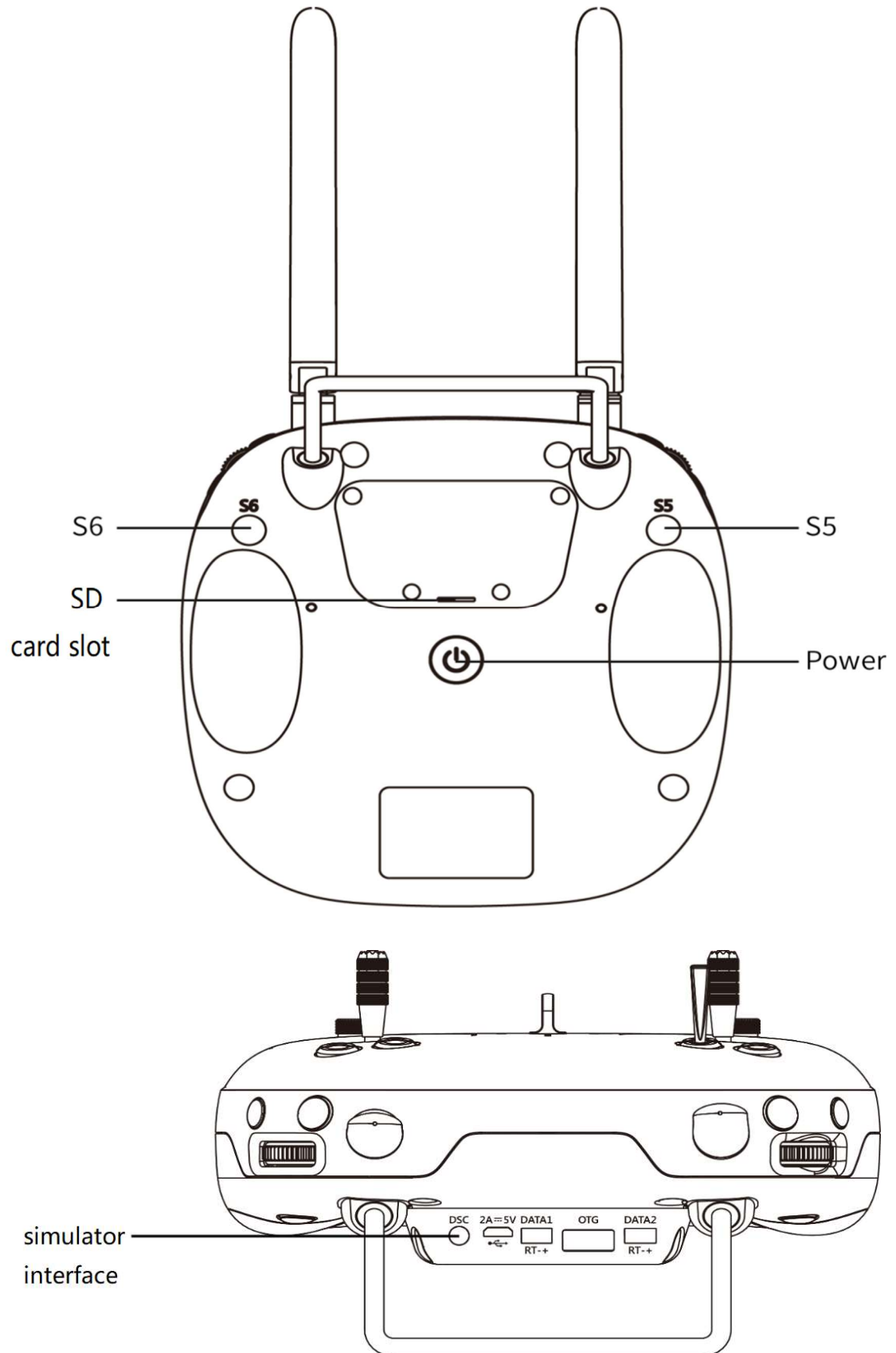


Rudder and Throttle could be changed during flying, obstacles could also be avoided by moving the **Aileron** stick.

6. Remote Controller

- ◆ Charger output more than 5V should not be used.
- ◆ Remote controller charging current should be not more than 2A.
- ◆ Any damaged,smoking or abnormal heating charger should not be used.
- ◆ Charging should not be continued in condition of smoking,smelly,weeping.
- ◆ Charging should not be in the area of baby playing.
- ◆ Charging should not at temperature more than 60°C.



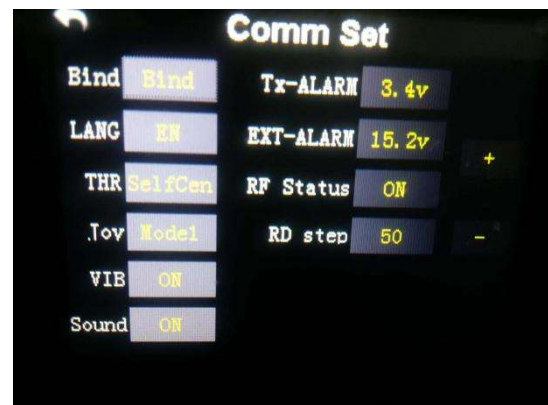


6.1 Function description

| Channel | top | middle | bottom |
|-----------------------|---------------|-------------------|-------------------|
| SA: flight mode | Altitude mode | GPS mode | AB mode/automatic |
| SB: pump mode | OFF | combination | manual |
| SC: terrain following | OFF | / | ON |
| SD: AB recording | / | Recording Point A | Recording Point B |
| S3: pump | OFF | / | ON |
| S2: back landing | OFF | / | ON |

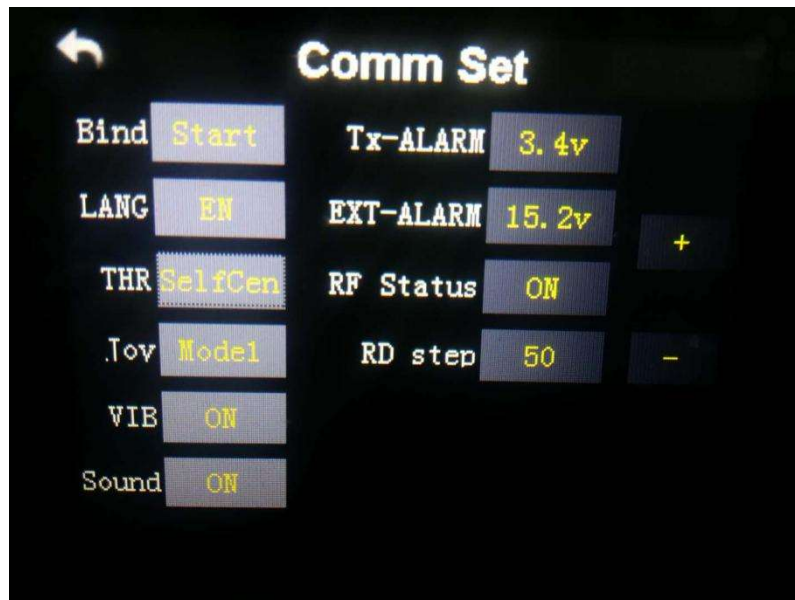
6.2 Bind

◆ Select *setting* of main menu,click *system setting--Comm Set*,click Bind *start*,then *bind* will be displayed.Power on the control system by power bank,copter will enter into bind mode automatically if the last remote controller signal could not be inspected after 5 seconds,*finish* will be displayed. **Remote controller need to be calibrated after bind.**



◆ Remote controller joystick setting

1. Sel back to center remote controller:close alarm function.
2. Remote controller need to be set. Setting method:main menu--*system setting*--click THR,choose SelCen.



Language could be set.

6.3 Remote controller antenna direction

Remote controller antenna should straight up when normal operation.

6.4 How to change between mode 1 and mode 2

Please change in the position:System--Comm Setting--Joy

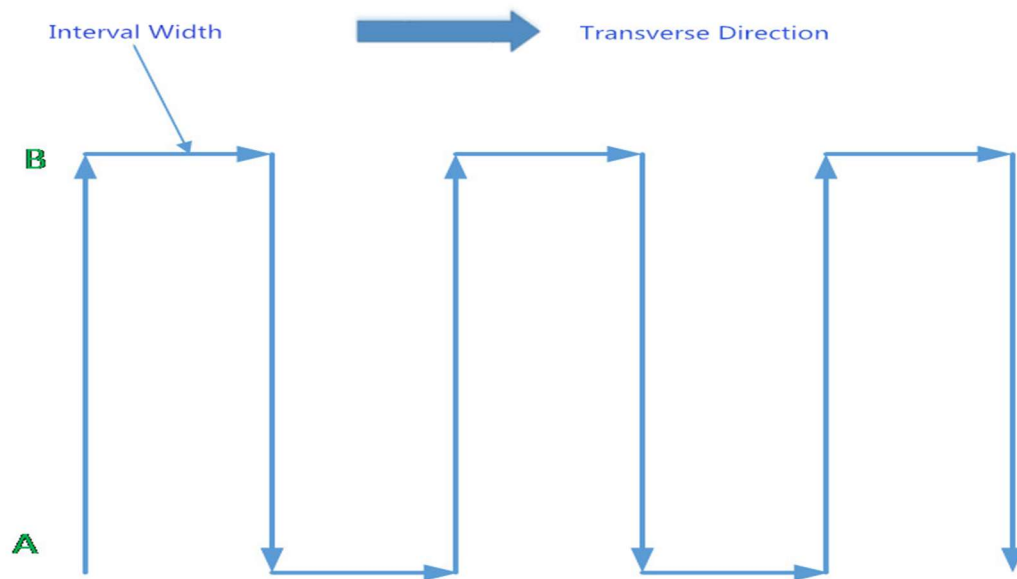
7. Function Control

7.1 Flight Mode

| Flight mode | Instruction | Operate | Condition |
|-------------|-------------|---------|-----------|
|-------------|-------------|---------|-----------|

| | | | |
|---------------|--|---|---|
| Altitude mode | Horizontal stabilization,yaw locked,fixed altitude | By transmitter | GPS satellite enough, LED does not flash red |
| GPS mode | Fixed horizontal point,yaw locked,fixed altitude | Transmitter operation/empty tank reaction/others | GPS satellites enough,LED does not flash red |
| AB mode | Copter will fly and spray along with AB point | Record point A and B and switch to AB mode,choose left or right for roll | GPS satellites enough, LED does not flash red |
| Return mode | Copter will fly back home point automatically,flying back tail to home point and then descend slowly, it could be controlled after arriving on the top of home point except throttle | Press button Home continuously/empty tank reaction/low voltage reaction/reaction of losing transmitter signal | GPS satellites enough, LED does not flash red |

7.2 AB Mode



AB mode is a more simple efficient mode with fault tolerance to operate. The working theory is above in the picture. Record the point A and B, the UAV will plan the flight line like this.

1. Operate Steps:

1) Record the point A, switch the mode to GPS mode. Until the drone self-hovering steadily, switch SD to "Point A memorized". After that, the LED flash yellow for 2 seconds. The controller have voice prompt.

2) Record the point B, drive the drone to the position you want, **be sure it is at least 10 meters away from point A**. Until the drone self-hovering steadily, switch SD to "Point B memorized". After that, the LED flash yellow for 2 seconds. The controller have voice prompt.

3) Select the direction, switch SA (Flight mode) to AB mode, move the roll joystick to select the roll direction. Move the joystick to the left limitation, the drone rolls to the left side, move the joystick to the right limitation, the drone rolls to the right

side. While the drone is doing AB point flight mode, the user can stop controlling the joystick. **Make sure that the water is enough, the pump is under auto-controlled or manual-controlled.**

4) AB Mode Correction

- ① Altitude correction: Control the flight altitude by the throttle joystick, “up” for the drone to rise, the “down” for the drone to set ;
- ② Correct the rudder to control the direction;
- ③ Fix point A: while the drone is moving from point B to Point A, push up the pitch stick to make point A 1m closer to point B, push down the pitch stick to make point A 1m away from point B.
- ④ Fix point B: while the drone is moving from point A to Point B, push down the pitch stick to make the point B away from point A, push down the pitch stick to make point B 1m closer to point A.

5) Shut Down and Quit

- ① When set the “no pesticide” action to self-hovering or return, in AB mode this function still works.
- ② When set the “low battery” action to return, in AB mode this function still works.
- ③ After the spraying work is done, AB mode can be shut down by switching into altitude mode.

6) To return to the breakpoint, shut down the AB mode auto-controlled or manual-controlled. After filling the pesticide in the tank and taking off, switch SA (flight mode) to AB mode directly, the drone would return right to the breakpoint.

2. Remove Point A and B

Move stick SD (AB mode) for 4-5 times rapidly, LED alternately flash red green and yellow, AB mode removed. **Without removing last AB point, can not set new AB point.**

3. Set the Interval Width

From the software->Flight parameters to set the spraying width and working speed

Attention:

- 1) Be sure to start AB mode within turning on the pump and agitation function working.
- 2) Be sure it is at least 10 meters away from point A to point B.
- 3) Every time recording point A and B, be sure to wait until the drone self-hovering steadily in GPS mode.
- 4) Without removing last AB point, can not set new AB point.

Appendix I Implication of Indicator Light



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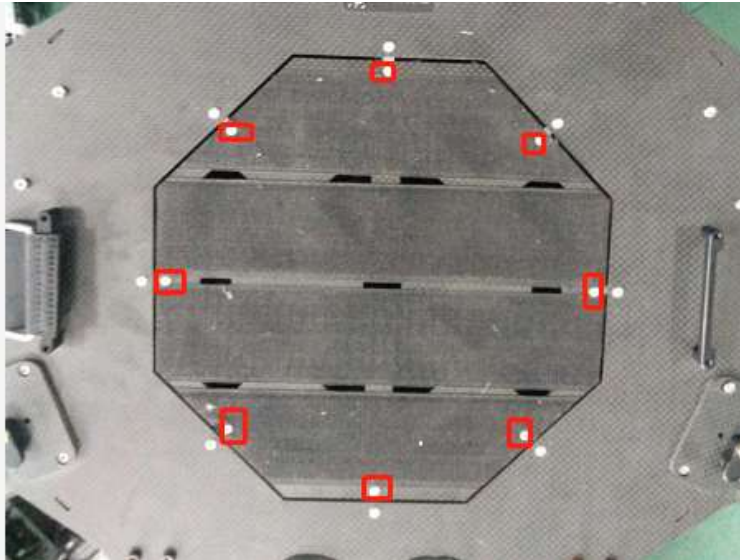
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| Items | Indicator light | Priority |
|--|---|----------|
| Flying Mode | | |
| Gyro mode(stabilization,altitude) | Green light single flash● | Low |
| GPS mode (angle,speed) | Green light double flash●● | Low |
| AB mode | Green light triple flash●●● | Low |
| GPS | | |
| GPS unconnected/GPS receive no satellite | Red light triple flash●●● | Low |
| GPS bad signal | Red light double flash●● | Low |
| GPS general signal | Red light single flash● | Low |
| GPS Good signal | Red light off ○ | Low |
| Low Voltage Warn(alarm) | | |
| First alarm level | Yellow light triple flash●●● | Low |
| Second alarm level | Yellow light quick flash●●●●● | High |
| Compass Calibration | | |
| Horizontal calibration | Yellow light constant light● — | Middle |
| Vertical calibration | Green light constant light● — | Middle |
| Calibration failed | Red light constant light● — | Middle |
| Calibration succeed | Red,green and yellow light alternating flash ●●● | Middle |
| Accelerator Calibration | | |
| Calibrating | Red,green and yellow light alternating flash ●●● | Middle |
| Calibration succeed | Green light constant light● — | Middle |
| Error | | |
| Remote controller lose control | Red light quick flash●●●●● | High |
| Compass interfered/error | Yellow and green light alternating flash●●●● | High |
| GPS lose satellite/error | Red and green light alternating flash●●●● | High |
| IMU over vibration/error | Red and yellow light alternating flash●●●● | High |
| Other Situations | | |
| Initializtion of power on | Red,green and yellow light alternating flash ●●● | High |
| Unlock | Red,green and yellow light alternating flash ●●● | High |
| Unlock failed | Red light constant light● — | High |

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Appendix II How to connect copter to PC GCS

1 Unscrew the 8 pieces of bolt and open the upper cover,see figure 1:

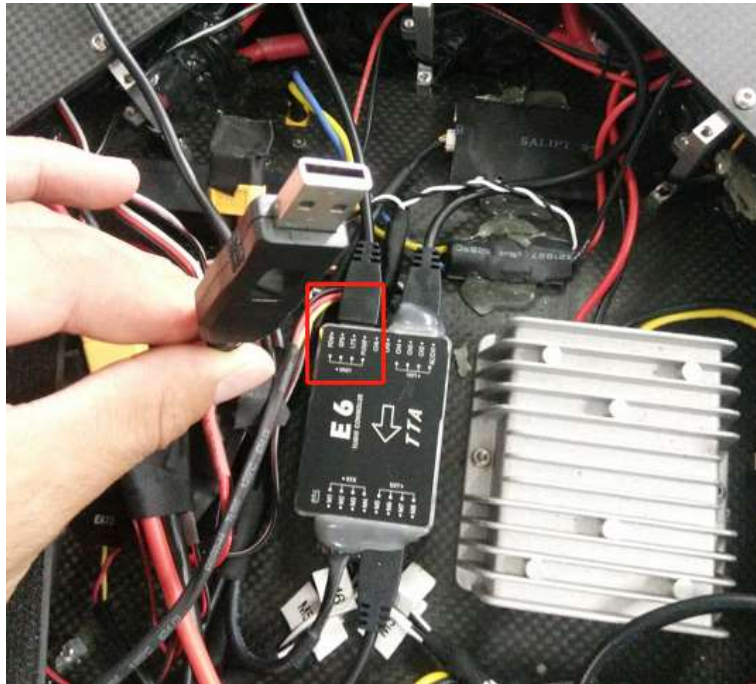


2 Find the computer connection cable from the attached bag,see figure 2:

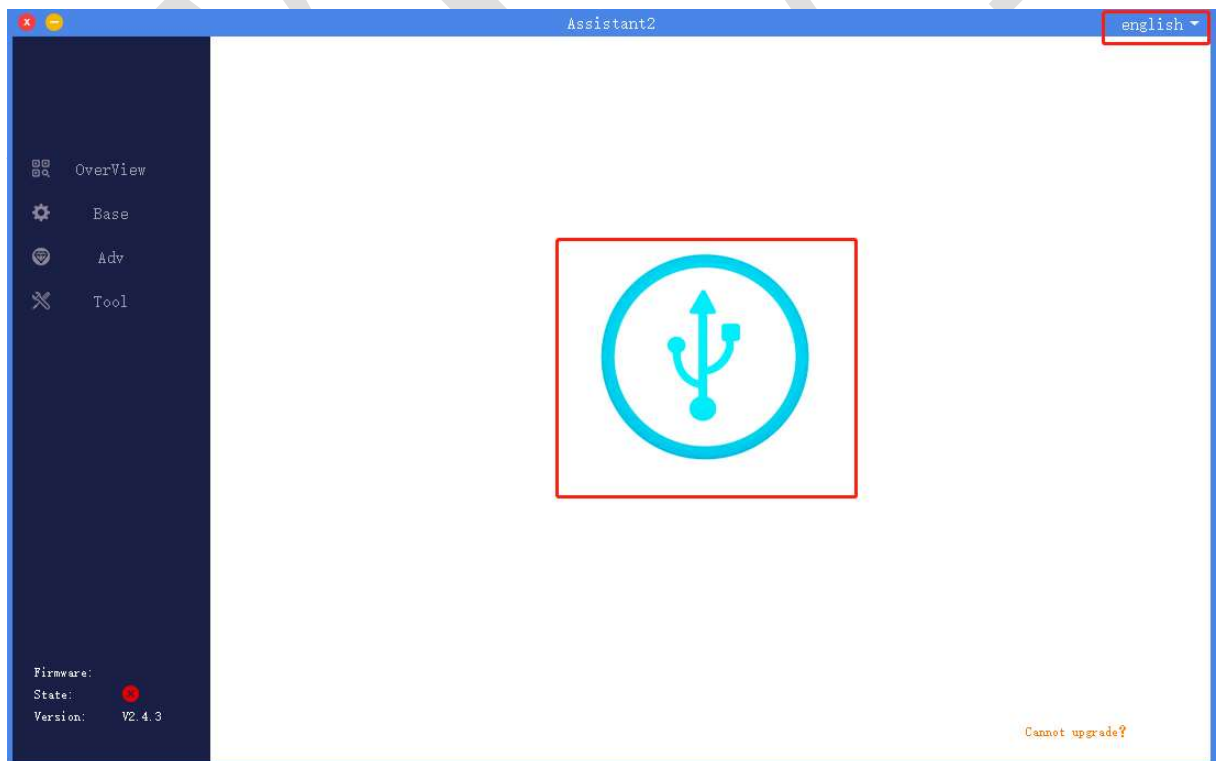


3 One connect to computer,another end connect to copter.Waiting for a moment(It takes few minutes to install the driver for the first connection with a new computer),see figure 3:

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4 Open PC GCS,select the language you need.Click the connection button,see figure 4:

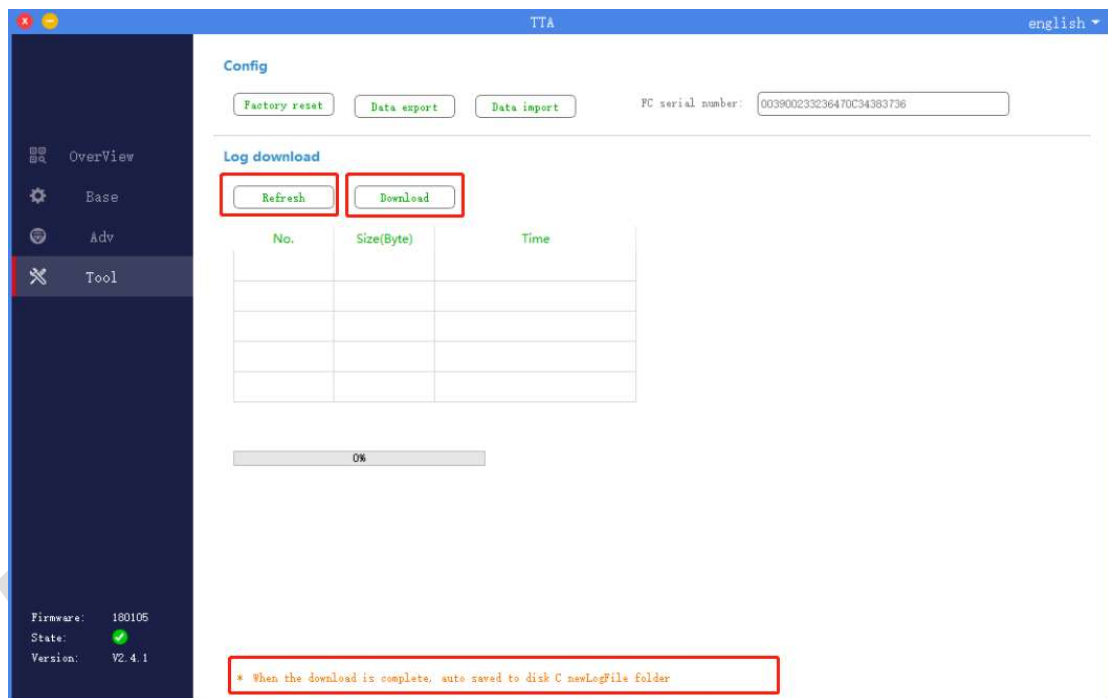




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Appendix III How to download log from PC GCS

1. Open the PC GCS, select Tool menu
2. Click Refresh button
3. Click Download button
4. Log is saved in the position as the orange word



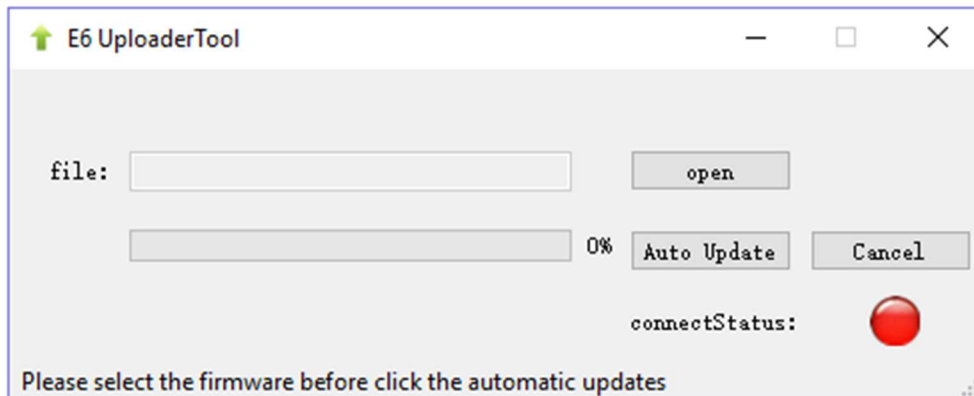
Appendix IV How to upgrade the firmware

- 1 download the upgrading tool from the following address:

<https://www.dropbox.com/sh/371k17zp8guv5y9/AAB8fUGjJ7zCN8qRF0Do8x57a?dl=0>

- 2 Open the upgrading tool, see the following picture:

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- 3 Click the button *open*, select the correct firmware.
- 4 Click the button *Auto Update*, then the circular indicator will turn to be green. LED of copter usually is OFF during upgrading.
- 5 Waiting until the down left corner to 100%. The circular indicator will also be turned to red and LED will flash red yellow green to self inspection. Waiting for a moment, the led will flash normally, then upgrading is finished.
- 6 Close the upgrading tool and disconnect the upgrade cable.

Disclaimer

1. To protect the legitimate rights and interests of users, please be sure to read our instruction attached carefully before using product. Be sure to understand your legitimate rights and interests, responsibilities and safety instructions; or it may cause property damage, safety accident and hidden personal safety problem. Beijing TTA reserves the right to update this document. Please be sure to in accordance with the instructions and safety instructions operating this product.
2. The users use this product directly or indirectly, any violation of the law, TTA company will not bear any responsibility.
3. This product is not suitable for under-18-year old and other who do not have full capacity for civil conduct, please avoid these people use this product. While using this product in public occasion please pay extra attention to operate.
4. Once you start using this product, deemed as you have read, recognized and accepted the product specification, disclaimer and terms and conditions of all safety



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instructions. It's user's commitment to their own behavior and therefore is responsible for all the consequences. Users promised to use this product only for legitimate purposes, and agree to these terms and any others policies or guidelines TTA company may develop .

5. In the process of using this product, please be sure to strictly obey the safety instructions included in this document but not limited in it. For violations of the safety information we have informed and cause any personal injury, accident, property damage, legal disputes, conflicts of adverse events, and all others relevant responsibilities, the loss should be borne by the users themselves, TTA company will not bear any responsibility.

6. In the following situations, we do not provide any technical support and security commitments:

- A) through informal agents or improper access to this product units or individuals;
- B) the unauthorized modification, debugging, and replacement parts products.
- C) warranty card, serial number, or flight data lost;
- D) due to personal error caused personal injury and property damage.