SF1650 Drone vehicle system

need

one-panelled door

Hand

volume

catalogue

Southern surveying and mapping group introduction

Guangzhou Southern Surveying and Mapping Technology Co., Ltd. (hereinafter referred to as "Southern Survey") founded Ding Guangzhou in T 1989, is a surveying and mapping geographic information industry group integrating research and development, manufacturing, sales and technical services. The business scope'coversurveying and mapping equipment, satellite navigation and positioning, Beidou Internet of Things, precise location services, precision displacement monitoring, Marine mapping and survey, UAV aerial survey, three-dimensional laser data collection, two-and three-dimensional geographic information software platform development, multi-dimensional data services and Lihui City application. Focus on providing smart grid, smart channel, smart highway, smart energy and other comprehensive solutions, committed to the industry information and spatial and temporal geographic information value enhancement.

Southern surveying and mapping without surveying and mapping geographic information industry is the largest and most perfect after-sales service system, including 30 provincial branch across the country, more than 100 municipal branch, nine overseas sales and service agencies, and have no respectively focus d satellite navigation and positioning, high-speed railway precision measurement, aerial survey, laser radar measurement, accurate location service, two three dimensional geographic information platform research and development and industry applications, and other subsidiaries. The group has no five surveying and mapping instrument r & D and manufacturing bases in Beijing, Wuhan, Changzhou and Guangzhou, with a total staff of more than 30 () 0 people. Group products to the domestic market comprehensive share rate of 60% to I-., Products are produced in more than 100 countries and regions around the world. According to the expert appraisal organized by the National Administration of Surveying, Mapping and Geoinformation, it is determined that the products and comprehensive technology of southern China have reached the world advanced level, ranked among the top four in the world, and its comprehensive strength ranks the top of the top 100 geographic information enterprises in China.

Southern Surveying and Mapping is committed to promoting the development of

China's surveying and mapping geographic information industry, and striving to become a world-class surveying equipment and geographic information application provider, with an enterprise of ten billion yuan and a century-old brand.

1. Introduction of hardware and software products

The southern self-developed Smart Airlines SF1650 uav, standard network RTK \ PPK and its fusion solution service support high-precision POS assisted aerial triangulation, with the ability of 1:500 scale mapping. Because of its long endurance and large load, SF1650 it can be applied to most application scenarios. Tongchuan type I ″ realizes rapid switching mount, equipped with intelligent lithium battery system one-click start, endurance of 50 minutes @5kg, 70 minutes @ 1kg, and easy to deal with the data collection of surveying and mapping geographic information, traffic network management, forestry investigation and planning, disaster emergency, power industry and so on.

System advantage

> Highly integrated

Multiple parts are highly integrated, and the whole machine is compact.

>High precision configuration

RTKA PPK And its fusion solution and calculation services.

>Multi-platform

The whole system is light, can be safely equipped with single lens, five lens, etc.

> Easy to operate

Flexible and fast disassembly, easy operation.

1.1 SouthGS, ground station control software

The main interface function portal includes the following contents:

"My: this key is my module entry, there is no user information, local task list, test area list, base map switch, cloud space, critical software functions:

"Planning the route: This key is to choose the planning method, you can choose photography survey, surround flight, belt flight three planning methods to plan the route task:

Flight Management: This key flight management, management of uav mission flight, map transmission and other functions:

, Equipment firmware: This key is the equipment firmware entry, manage the UAV fly digging firmware, calibration and other functions:

"Start connection: this key is to enter the connection device, retrieve the bluetooth device existing in the surrounding area, display the UAV connection status, and connect the UAV remote control Bluetooth.

2 field data acquisition

2.1 UAV installation

2.1.1 Expand the machine arm

First of all, we hold the machine arm with our left hand, point the buckle at the card (as shown in the left picture), and press the thumb down (as the C on the right, after the "click", the single machine arm is fixed, and the rest of the machine follows the flow eng

2.1.2 Battery installation

Take out the battery and place the battery in the battery compartment, aim at the battery under ten thousand card slot, help the battery to push, to "click", the battery fixed the cow, the other six in turn according to the process fixed.

2.1.3 The Battery is energized

Point the thumb at the battery switch button, press short first, then press long (until the four power display lights flicker in turn, the power display light is on.) Panasonic thumb, in turn check whether the six battery power display lights are all lit, the plane power completed.

2.1.4 Equipment inspection

Check each connection position in turn, (e. g., arm connection, battery connection, laser connection, camera connection.) Whether there is no firm connection, eliminate hidden dangers, safety flying iding.

2.2 Route planning and implementation

2.2.1 Ovi View of the survey area

First, we opened the interactive map and imported the KML range line provided by the customer (as shown in the figure below) for a regular pre-flight safety evaluation.

6   **- KMHotwe.Mwmm**   **-ox**
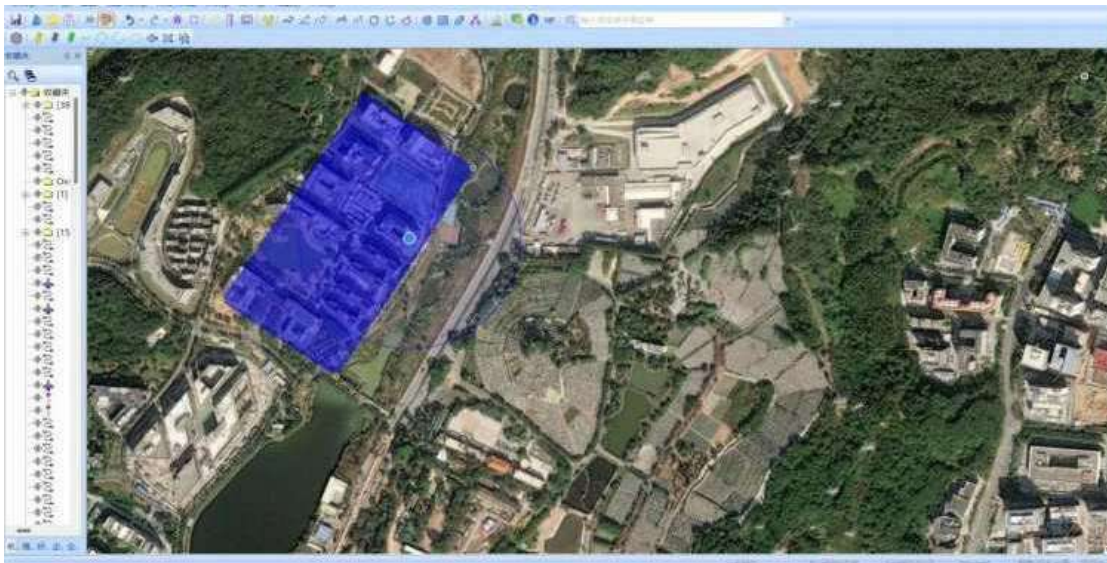
Regular 6-line safety assessment:

① To judge the airspace, judge whether there is a no-fly area near the test area or the restricted flight area. If there is a no-flight area, apply for airspace through the normal process.

② Judge the weather conditions, obtain the weather conditions in the survey area in advance, and try to avoid rainy days, foggy days, cloudy days and windy days

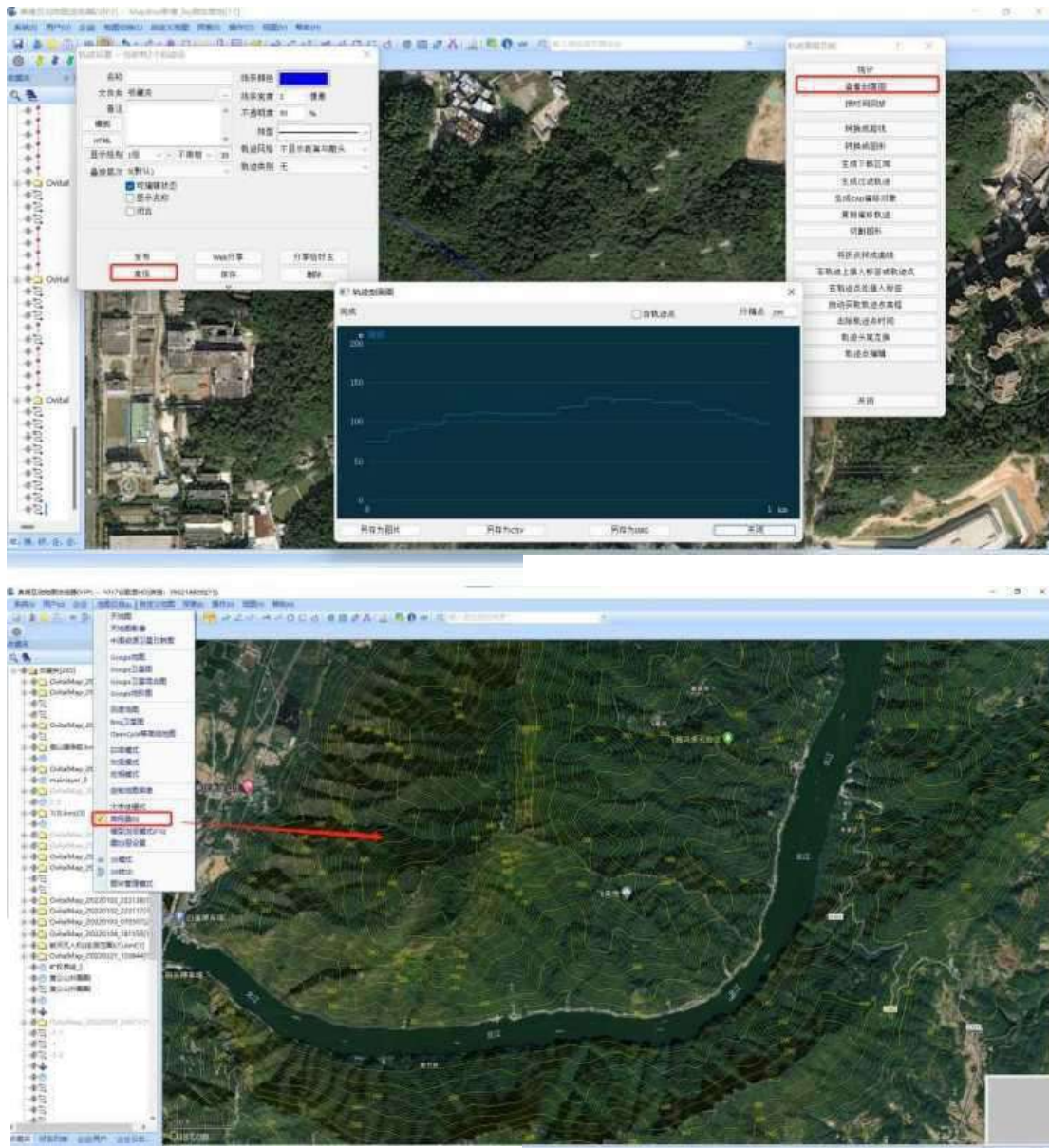③ The height of the Oi interactive map is used to determine the drop of the measurement area

Situation, plan the route when considering the point Si data and image. (Note: The data must be collected on site

The spirit to explore high.）

2.2.2 Ground station planning air routes

The top of the photogrammetry can show the mapping area of the previous route mission, 5, range, expected flight time, route interval, minimum photo interval, and number of photos.
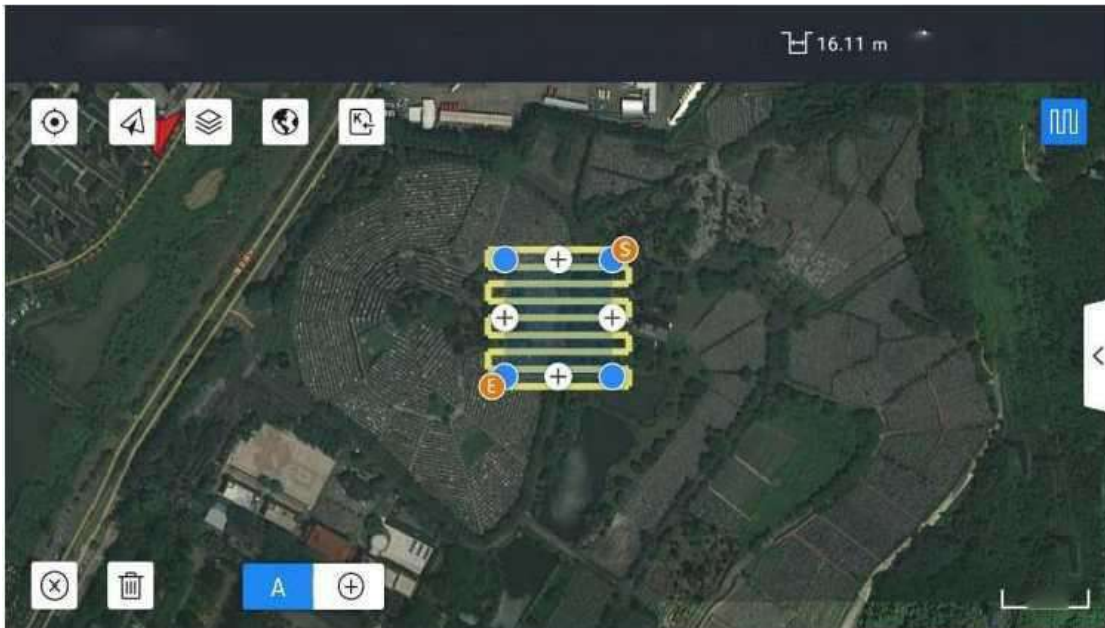
82 m

   Position to the current tablet location:

: Position to the location of the UAV:

: Switch the map display layer (vector map, satellite image map):

Import kml base map, auxiliary map display: import dem data for ground imitation flight:

: The kml test area can be imported for the test area route planning:

: Delete the current test route:

: Delete the selected zone control point:

: Select routes and add routes:

: Show the route.

Click the menu bar hidden by the arrow on the right to pop up the route planning parameter setting box, as shown in the figure:
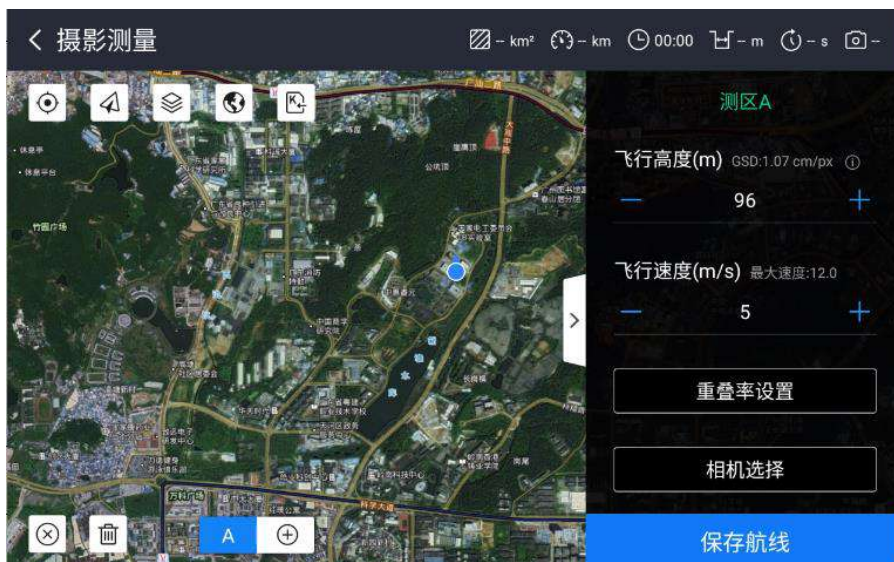
①Line height: set the aircraft to perform the route mission altitude: (relative to the R point height)

②Flight speed: Set the aircraft to perform the route mission speed:

③Camera selection: set the camera model of the flight photography
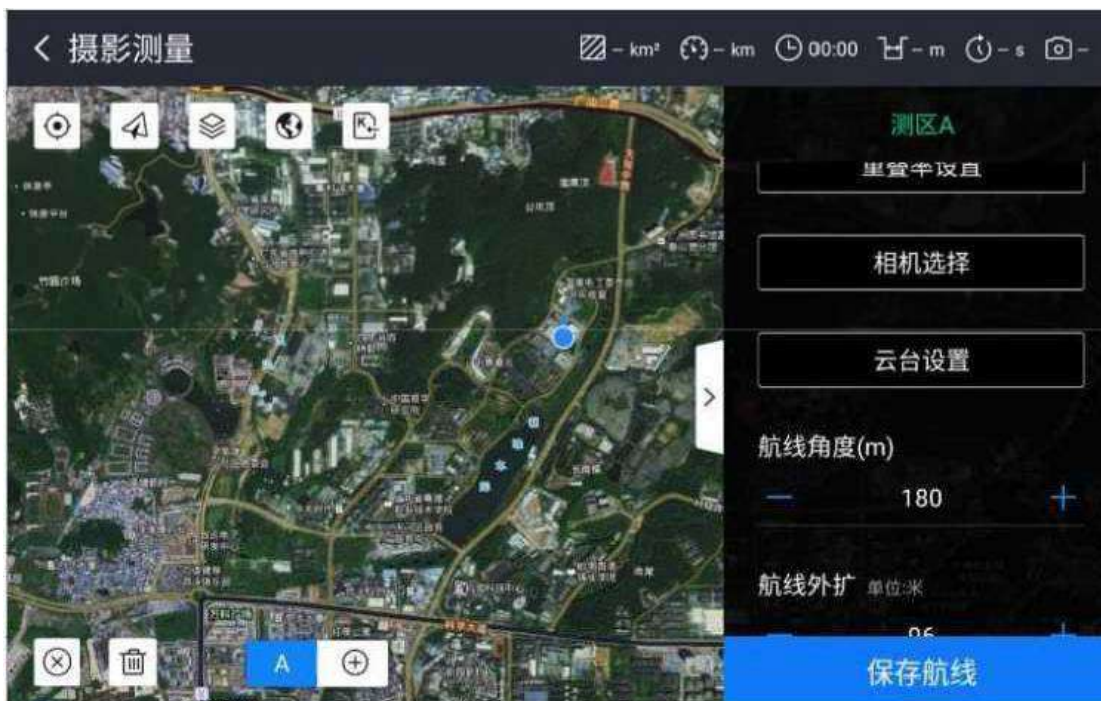
④Overlap rate setting: Set the photo overlap rate of flight photography, including heading and lateral overlap rate:

⑤Si station setting: Select the Si station Angle of the

⑥Route Angle: setting. Flight Angle of the planned air

route:
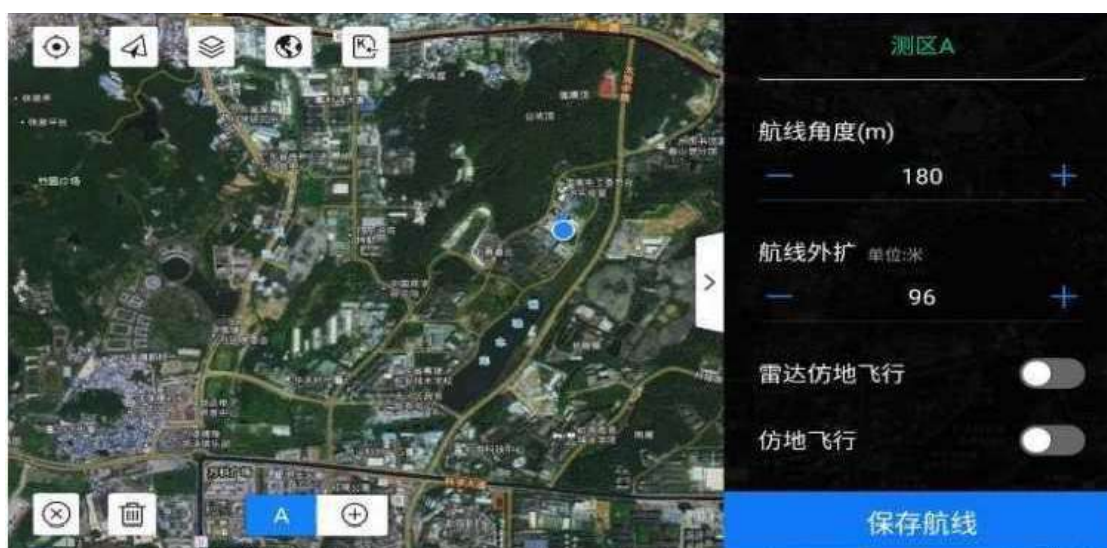
⑦Route expansion: setting up. Expansion range of planned routes relative to the

20 mapping zone:adar imitation flight: radar imitation flight switch, and

imitation flight mutually exclusive, the final flight altitude = radar detection height + set flight height:

⑧row: Set whether to use the ground R row:

Save the route: jump to enter the second confirmation page of the route After selecting the corresponding camera lens in [Camera Selection].
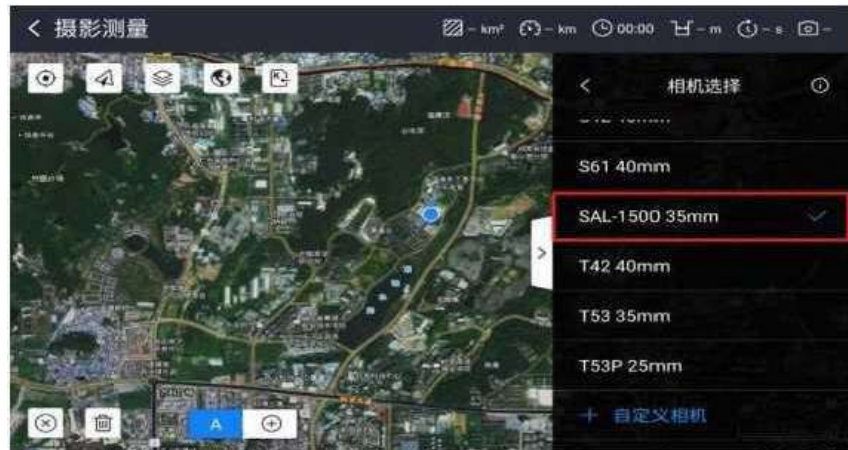
Confirmation the planned route information twice, as shown in the figure:

Click [Save] to save the route in the mission, which can be opened in the [Task] in the flight management interface

And execute: or click [execute] to directly jump directly to the flight management field and perform the route mission.

Click to continue, and finally drag the slider to the far right, before the drone can take off straight.

2.2.3 Automatic execution of tasks

2.2.3.1 Digital transmission display
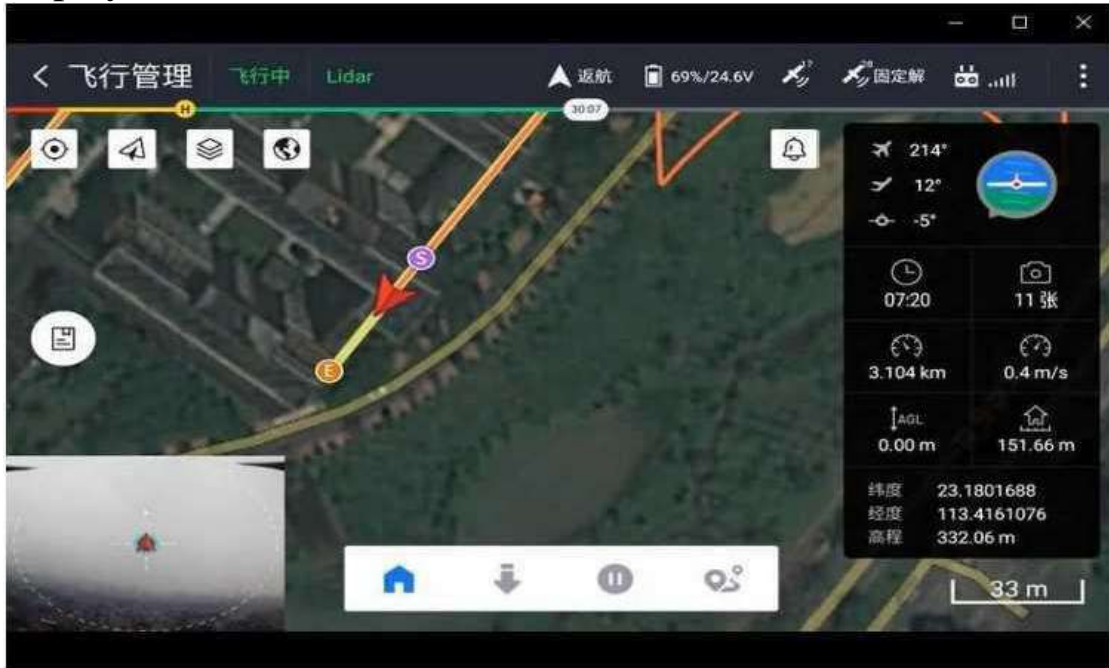
Real-time flight time.

: R roer air horizontal flight speed.

: Return to the take-off point:

: Control the aircraft to land in situ:

 : Control aircraft hovering in current position:

    (1) After successful landing, automatically lock the UAV:

   : Control the aircraft to perform automatic route tasks:

2.23.2 Figure transmission and display

 : The relative altitude of the aircraft.

2.2.3.3 Flight report

After the route execution is completed or the landing is suspended, the software will be small after the drone completes the mission ["report]. The battery power can be turned off only after the end of the flight mission.

2.3 End of the flight

2.3.1 Disassemble the equipment

With the aircraft battery powered off, refer to the above assembly process and carefully remove it slowly.

Press the battery insurance button with one hand, and pull the battery to the

outside to take out the electric'pool.(6 batteries are operated in turn)

Equipment packing.

Appendix 1: Aircraft calibration and functional upgrades

1 Aircraft calibration

1.1 Accelerometer calibration

Note: The factory has been calibrated, and generally does not need to be calibrated again after long-distance transportation

1 . Place the plane on a smooth road, just a battery to power the plane

2. Power up the aircraft, connect the remote control machine to the aircraft, open the ground station, and click on the equipment firmware

3.Click on the accelerometer for calibration

4.Start the calibration according to the primary school

左面朝上   右面朝上   机头朝上

机头朝下   底朝天

5.After the calibration of the directions, the station will prompt the calibration, and the R machine can be restarted

1.2 Calibrate the compass

Note: Calibration is required after the long-distance transportation

1.2.1 Use the ground station for calibration

1. The R machine is placed on smooth road away from strong magnetic field or metal environment.

2. Just one battery to energize the aircraft, the remote control to the aircraft, open the ground station, point the equipment firmware

3. Click on the compass needle for calibration

4. Click Start
alibration

5. Turn the aircraft
from multiple angles

6. Until the progress bar of the ground station is completely completed and the calibration is successful, the cruising machine can be started

1.2.2 Calibrated using the MissionPlanner software

1. The R machine is placed on smooth road away from strong magnetic field or metal environment.

2.　Only'Yan battery energpower the aircraft, remote control machine connection & machine, open the remote control hotspot, set the name and password,

Use the computer to connect to the remote control hotspot.

3.　Open MissionPlanner software, select TCP) j, click connect, 1P is 192.168.43.1 point Tok
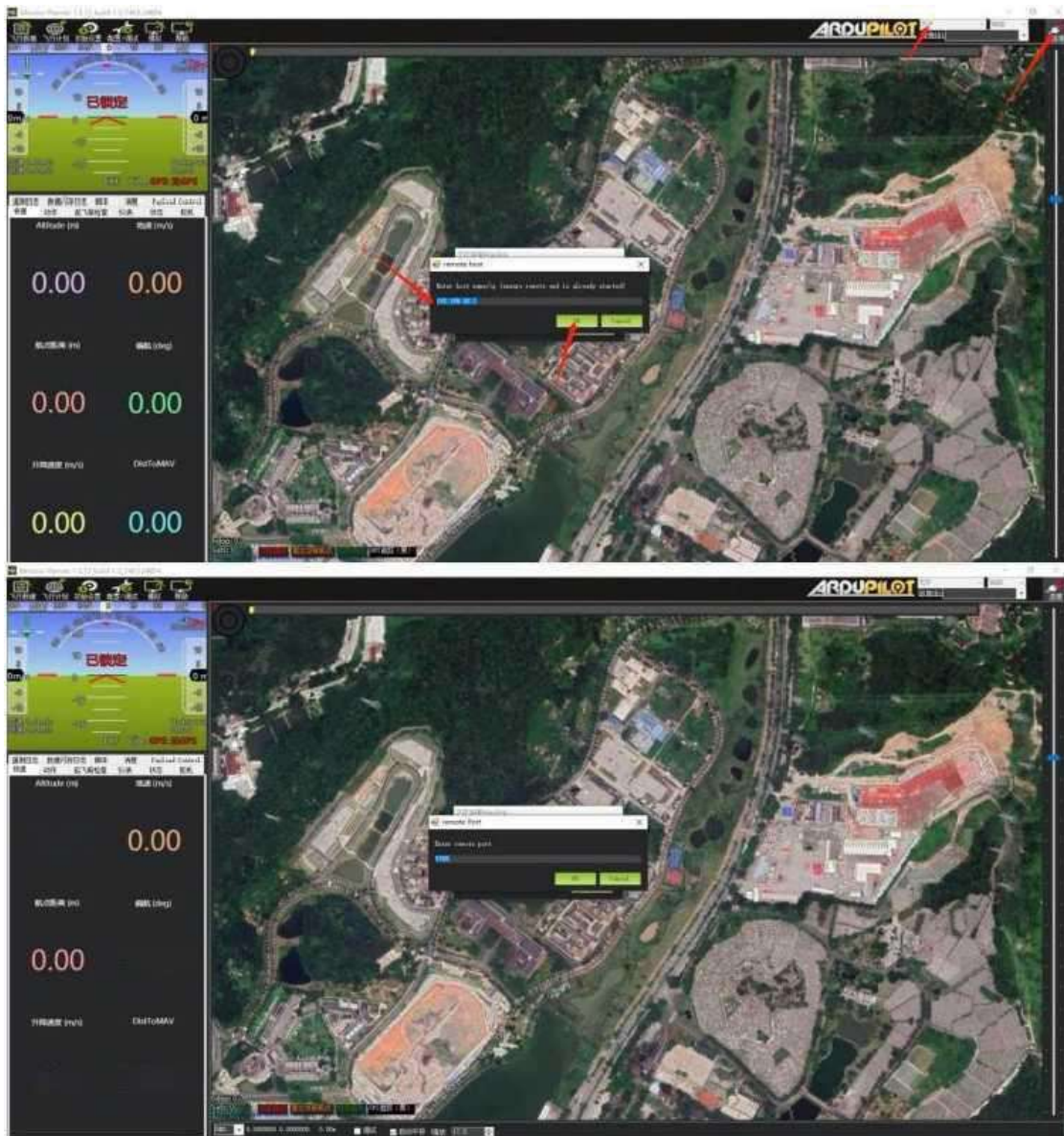
4. Point towel initial setting-> necessary hardware 1 compass-start, that is, start calibration, rotate the aircraft mode and ten type
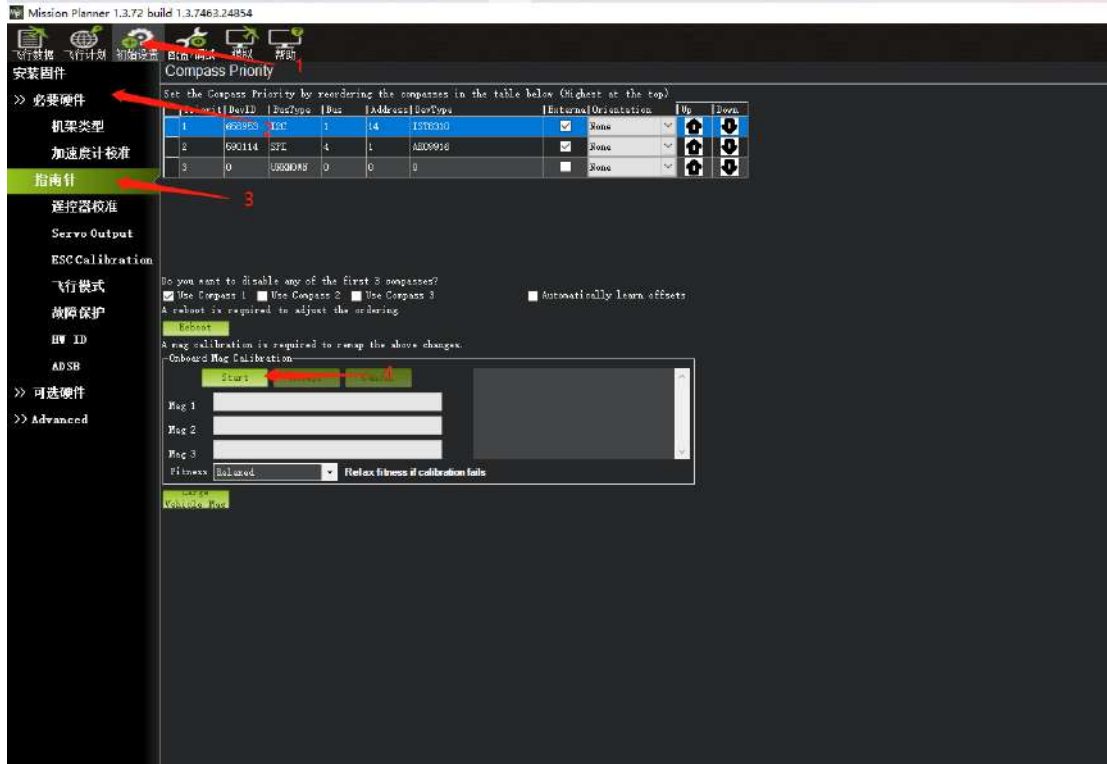
2 Firmware upgrade

2.1 Aircraft registration code

1. To connect the wireless network of the aircraft and use the remote control to connect to the background, you need to open the browser to enter the website 192.168.144.12. For the computer or mobile phone and other devices, you should open the browser to enter the website 10.1.1.1, and the account password is admino
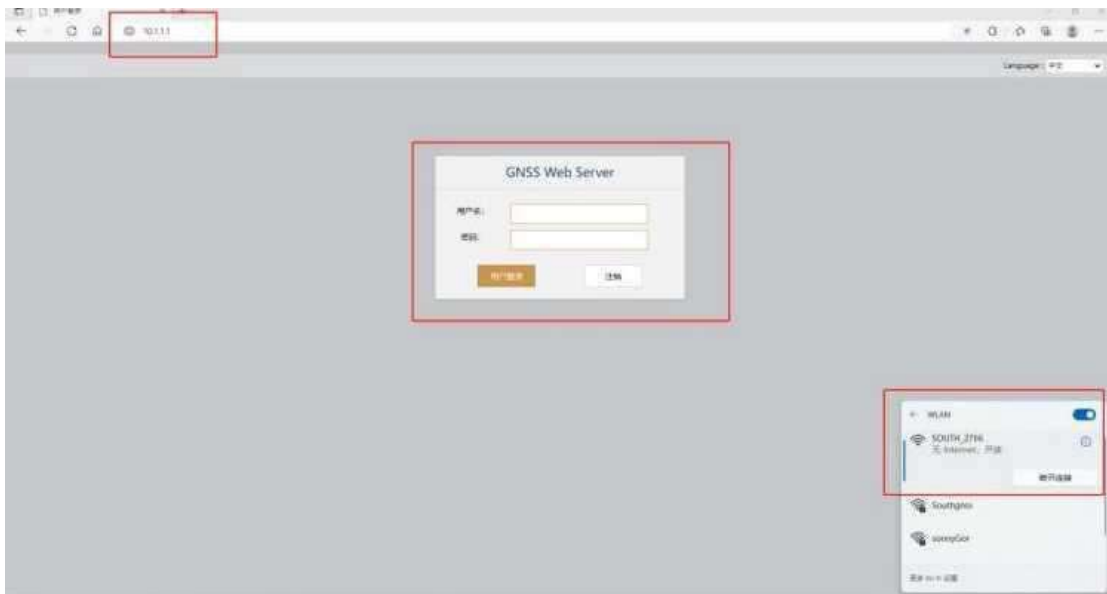
2. Click the machine status 1 system information to view the aircraft firmware version, OEM version and difference board card expired

Information, in the upper left corner is the fuselage number.

3. The R machine has expired, so you can contact the after-sales personnel to obtain the registration code, as shown in the figure below Aircraft firmware upgrade

2.1.1 Upgrade the ppk firmware mode

Enter the page, the left "firmware upgrade" drop-down to select the upgrade firmware, the right slide to find the local upgrade,

Point the towel to select the file, select the prepared new firmware, click to install the new firmware
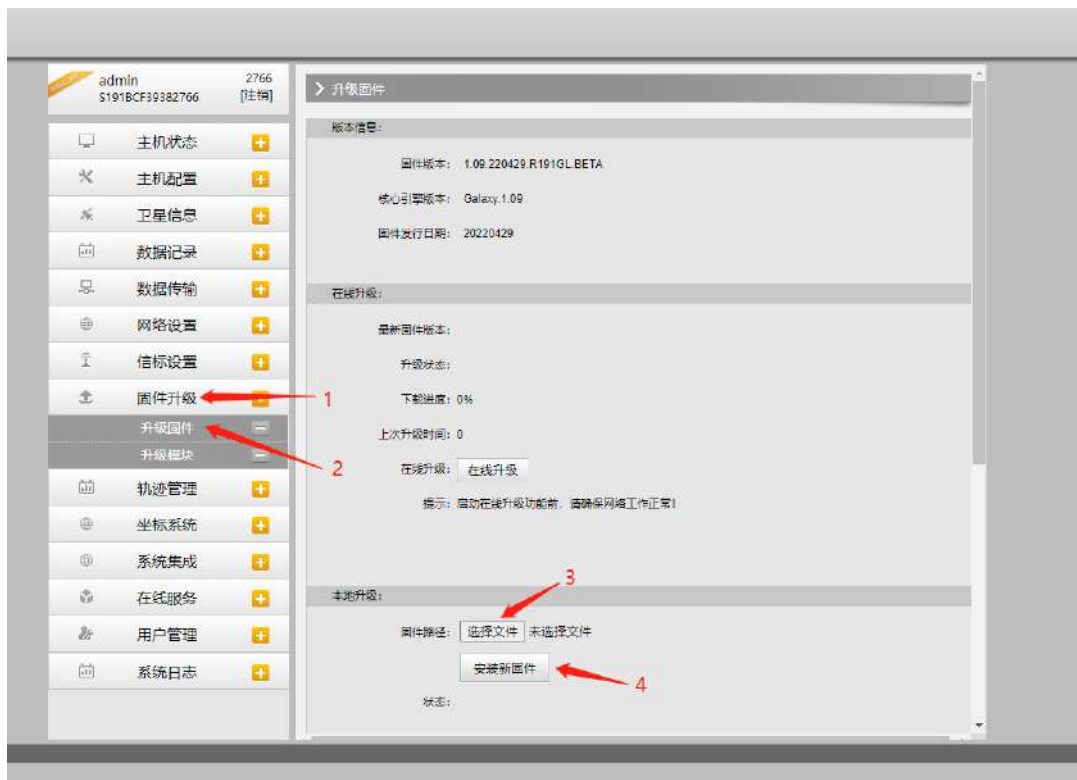
2.1.2 Upgrade the OEM firmware mode
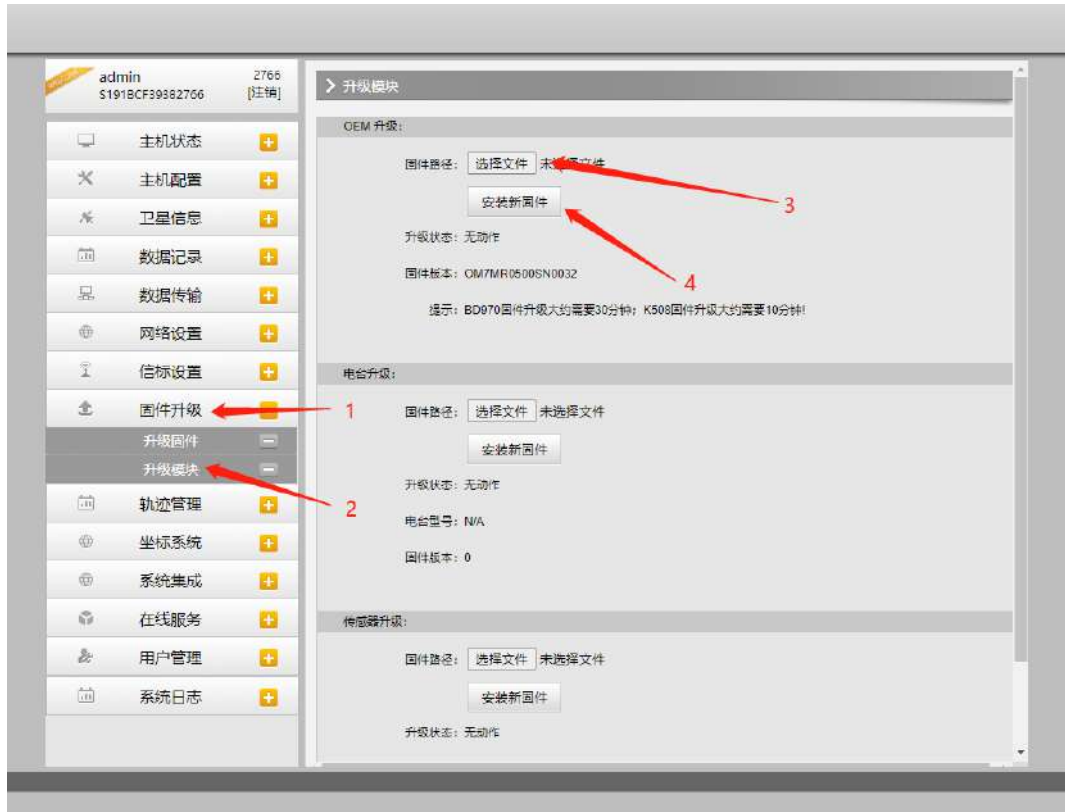
2.2.3 Upgrade the flight control firmware mode

I . Open the MissionPlanner software, Sichuan transmission line connected to the aircraft and computer, pay attention to this time do not point the towel right I: corner ″ connect Pick up the plane″
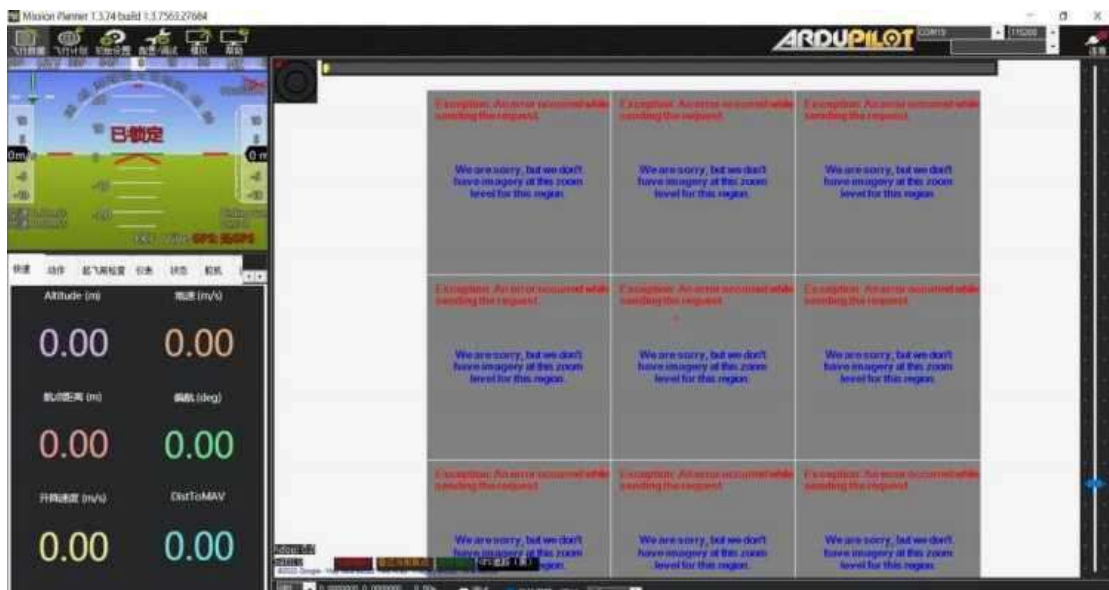
2. Point initial settings-Install firmware Legacy-Load custom firmwa

3. Select the firmware that you want to upgrade

4. After clicking open, there is no window prompt. After clicking ok k button, the firmware will connect the plane with the computer within 30 seconds, and the firmware will be automatically written to the K control for about 12 minutes until the progress bar is complete.

2.2.4 Upgrade the flight control parameter mode

1. Connect the plane to the computer, open the MissionPlanner software, and connect to the flight control

选择 Mavlink（若没有找到 Mavlink 也可以选择 AUTO 自动识别），点击连接。

注：后续步骤皆需要在连接状态进行。

2. Click on [Configure. / Debug all parameters], the corner [load] select the latest parameters in the folder,

 Click [Open], click [Write Parameters]
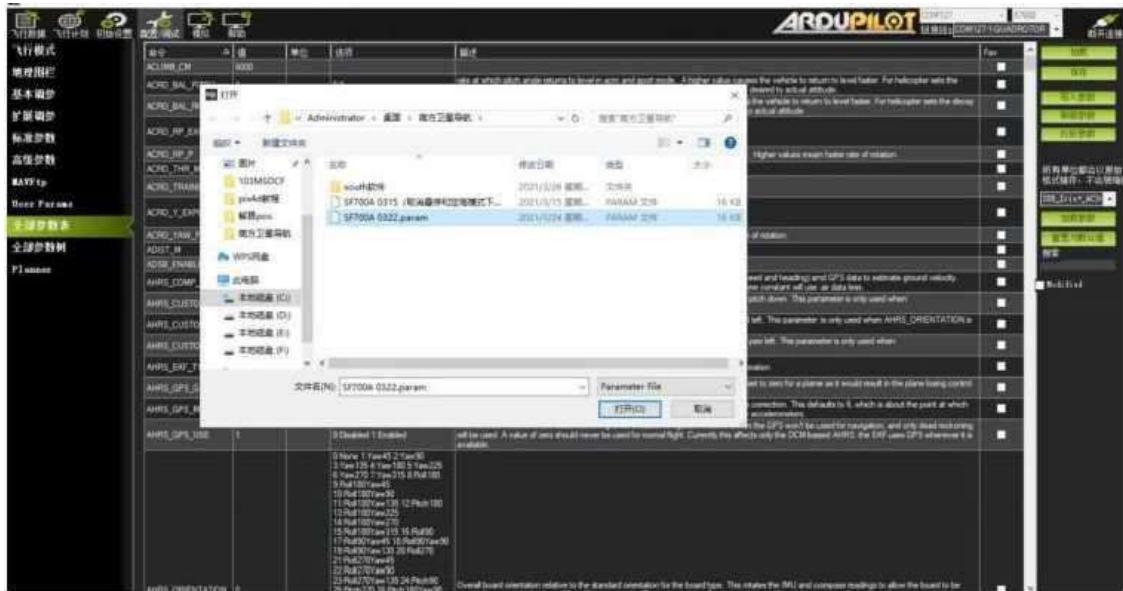
3. The Successfully Saved dialog box appears as a successful brush.

2.3 cors, account Settings

1. Check whether the built-in SlM card is successfully connected
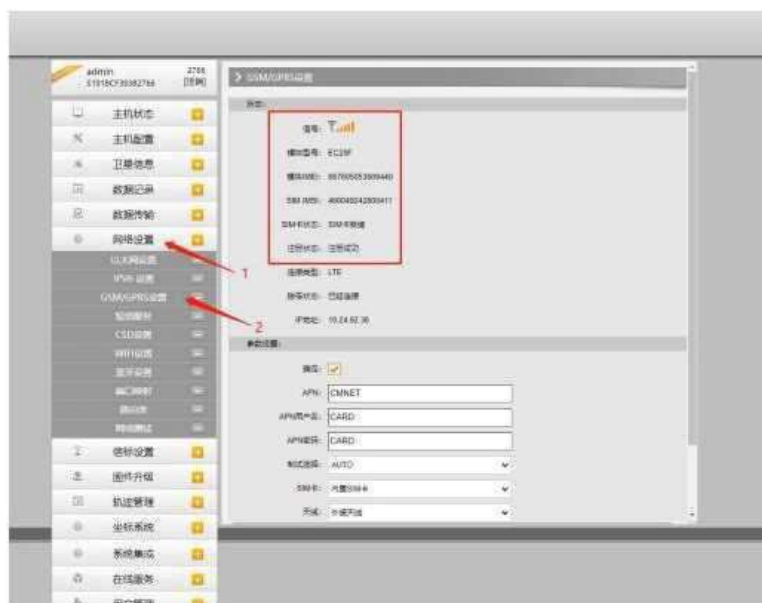
2. Set. Location service account, make the aircraft get fixed solution: general

cors

| <<1 select Eagle, China Mobile account select CMCC, click the left "data transmission" drop-down select NTRIP Settings., Check CMCC and click Submit directly(the account has been activated in place).
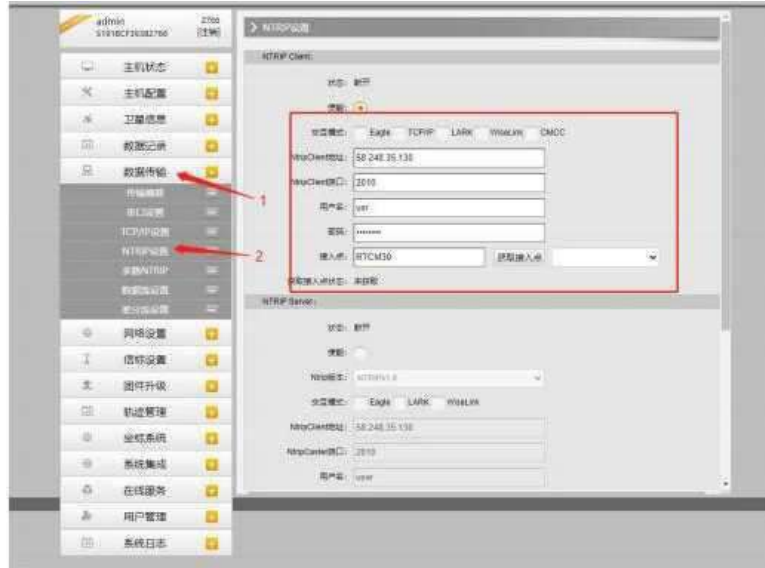
3. Software installation method of the ground station

1. Connect the computer USB interface and the remote control Type-C interface, pull down the remote control, and select the transfer file

2. Copy the installation package to m record
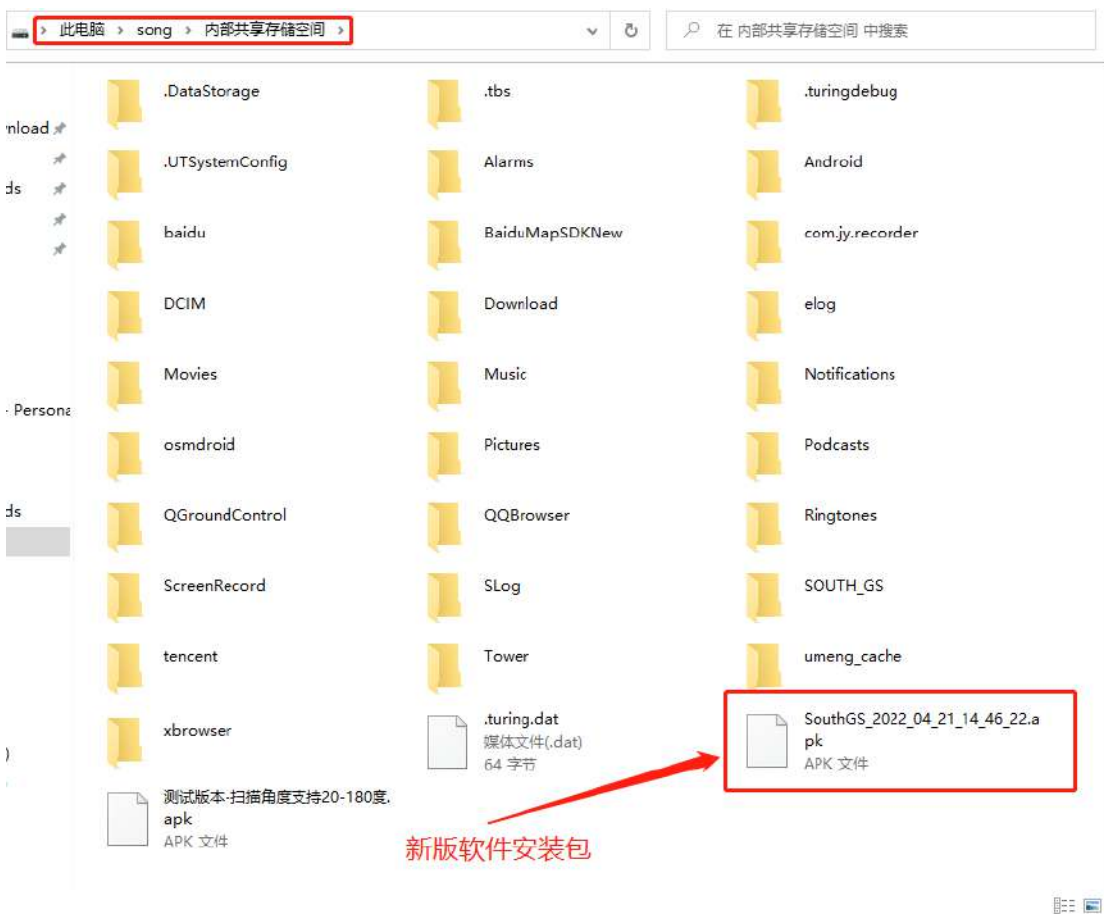
3. Return to the ground and stand, click set a row click store an internal shared storage space a browse a row click from

Computer end short system of the new version and the station began to install a click to install a installation completed
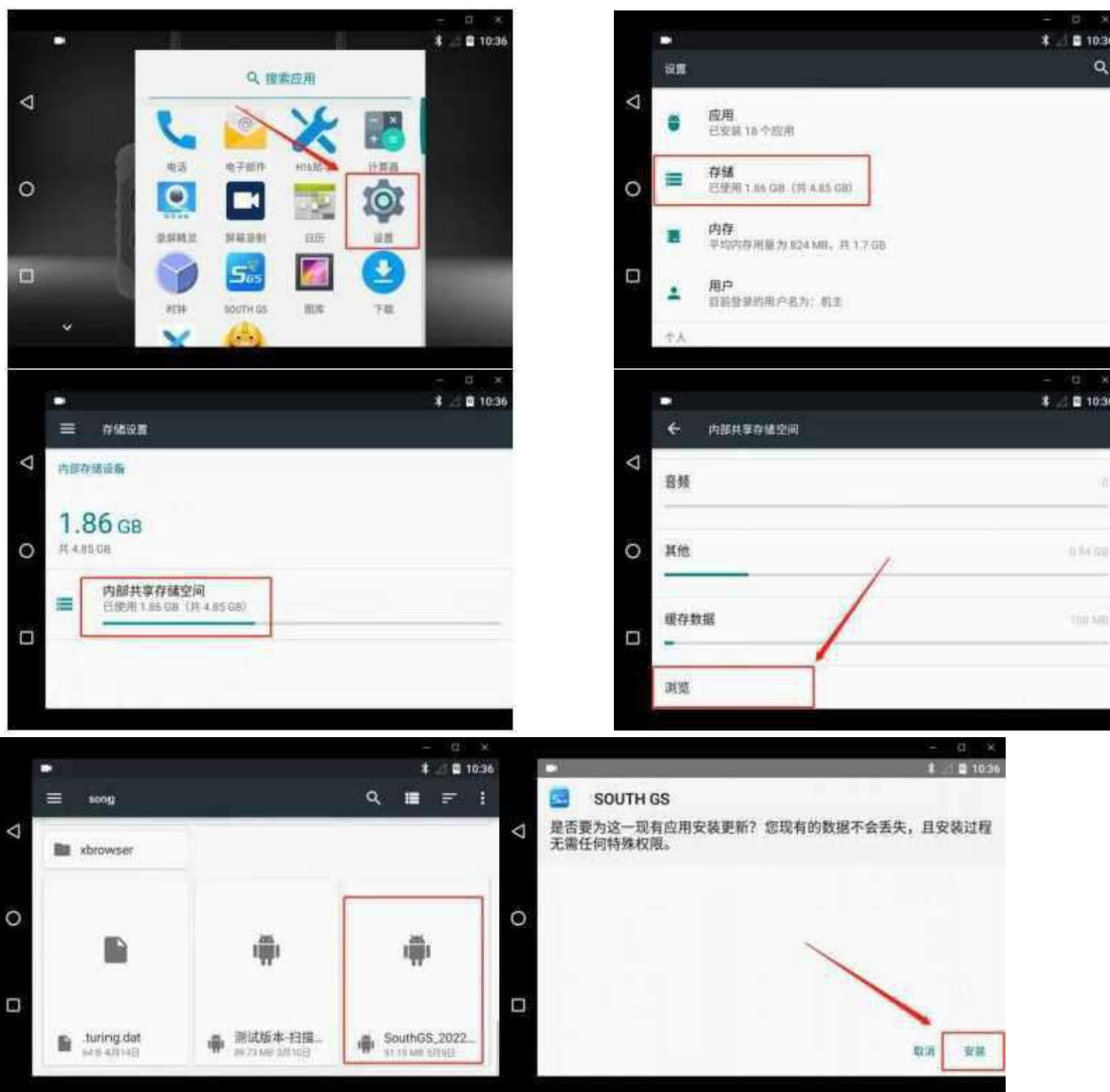
Appendix 2: Notes for the safe use of Zhihang series UAV intelligent battery

Drone flight smart battery makes Sichuan before. Please read the entire user manual and get familiar with the functions of the product before proceeding to j. If not alone, it may avoid serious storage of itself or others, or lead to product damage and property damage C.

Wood products are more complex, need after a period of time to be familiar with to make Sichuan safe, and need to have some basic knowledge to operate. Without a strong sense of safety awareness, improper operation may lead to product damage and property damage, and even cause serious damage to themselves or others.

Do not use non-Southern satellite navigation instruments for components provided or recommended by the company, and must strictly comply with the guidance of Nanwan satellite navigation instruments for installation and use of products. This guidance document contains instructions on safety, operation, and maintenance.

Read the ″ instructions and warnings in the manual before assembling and setting up. **personal injury. Always refer to the following installation and blunt guidance**

1 User use

1. Do not contact the battery with any liquid. Do not immerse the battery in water or wet it. The water inside the battery may corrode, causing it to spontaneously ignite, and may even cause an explosion.

2. It is strictly prohibited to make the non-southern satellite navigation instruments limited to the official battery provided by the company. If you need to replace it, please contact the regional sales responsible personnel for the relevant purchase information. The Company is not responsible for battery accidents and flight failures caused by the use of non-Southern satellite navigation instruments without limited batteries provided by other parties of the company.

3.   It is strictly prohibited to make Sichuan drum package, leakage, packaging damaged battery. If any of the above happens, please contact the Southern Satellite Navigation Instrument or its regional sales representative for further processing.

4.   Verfirm the battery is in good condition before installing or pulling iting the aircraft.

5.   The battery shall be between ambient temperature of-10 ° C and 40 OC. Temperature higher than 5 (TC will affect battery life: the risk of air bulge at ambient temperature above 60 ″ inflation, leading to battery fire and even explosion. Ambient temperature is too low (low T-20%: 0 battery performance will be seriously reduced, can not meet the normal use.

6.   When the external temperature is 2 (FC to 15V, the external heat source (Sichuan vehicle air conditioning heating, no open fire or high temperature equipment heating) should heat the battery, and the battery is allowed to rise after meeting the temperature conditions

7.   No use of batteries in a strong electrostatic or magnetic field environment.

8.   Ban 1 on any way to remove fresh or sharp objects puncture the battery. Otherwise, the battery will cause to catch fire or even explode. The liquid inside the battery is highly corrosive. If there is no leakage, please stay away immediately. If internal fluid is sputtered onto human skin or eyes, rinse immediately with water for at least 15 minutes and seek medical attention immediately.

9.   If the battery falls from the aircraft or is hit by an external force, it shall not make Sichuan again.

10.   If the battery accidentally falls into the water during the aircraft flight or otherwise, immediately pull out the battery and place it in a safe open area. Stay away from the battery until it is completely dry. The dried batteries shall not be used again and should be properly disposed of according to the discarded method described in this article. If the battery catches fire, please use sand or dry powder firearms and other solid fire extinguishing equipment to extinguish the fire.

11.   Do not place the battery in a diced microwave oven or pressure cooker.

12.   Do not use wires or other metal objects to short circuit the positive and negative electrodes of the battery.

13.   Do not impact the battery. Do not place heavy objects on the battery.

14.   If the battery is not dirty, wipe it clean with a dry cloth. Otherwise, it will cause poor contact, resulting in the loss of energy personnel or unable to charge.

15.   Check the smart flight battery level regularly. If the battery is recycled more than 150 times, replace the new battery otherwise it may affect E line safety.

16. Flight order, please confirm that the battery is connected, the battery compartment is connected, the battery surface, the battery compartment surface is dry without water, and then insert the battery into the fuselage.

2 Battery charging

1.   The smart flight battery must be charged using the Southern satellite navigation instrument without the battery charger provided by the company. The company will not be responsible for all the consequences caused by charging the charger provided by Ding-Sichuan.

 When charging, please place the battery and the battery box on the non-flammable ground around the cement. No one pays special attention to the charging process in case of accidents.

2.   When charging, you must ensure that the battery charger operates normally and does not contact any conductor or liquid.

3.   It is forbidden to charge the battery immediately after the end of the line. At this time, the battery is in a high temperature state, and the forced charging will cause serious damage to the battery life. It is recommended to wait for the battery

to drop to room temperature (the waiting time is usually 25 mm less. Determine J again according to ambient temperature〃Charging ideal charging ambient temperature (15° C to 40. Can greatly extend the service life of batteries.

4. After charging, please disconnect the battery charger from the battery. Regularly

5. check and maintain the battery charger, battery appearance and other spare components. Do not use alcohol or other combustible to clean battery chargers and batteries. Do not make Sichuan have no damaged battery charger.

6. When the battery is plugged in on the battery charger for charging, be sure to plug in the battery, do not falsely connect or misconnect the battery.

7. When the battery is in the K row discharge state, in order to get as much time as possible to give the operator no more time to land, the battery will turn off the overdischarge protection to keep the battery output. 111. In this case, it is likely that due to serious overdischarge, the battery with low battery voltage T21.3Vo serious overdischarge is recharged without great fire safety risk. Therefore, when the battery voltage is low to 21.3V during flight, the battery has been discharged and recharging is prohibited. The battery could not continue to make Chuan. I big I this user please 〃pay attention, do not deliberately put the battery seriously, otherwise you will bear the risk of battery damage.

8. After the battery is charged, the battery will be removed in time to prevent the battery from floating charging, which can extend the life of the battery in Sichuan

9. Make sure that the battery is connected to the U and the battery surface is dry without water, and then charge the battery.

10. In winter environment, make the Sichuan slow charging mode, charging current <5Ao

11. The battery with large cell pressure difference is forbidden to fly (the

voltage difference of the battery is> 0.1 V is determined to be large).

3 Storage and transportation

1.   The storage temperature is kept in the range of 1035° C degrees, with a maximum temperature of 40° C and a humidity of 30-80o

2.   Please store the battery out of reach of children. If children accidentally swallow piano parts, they should seek medical attention immediately.

3.   Do not place batteries near heat sources, such as in direct sunlight or hot cars, fire sources or heaters. The ideal storage environment for the batteries is 22. (, To 30... Shade and dry at room temperature and avoid sun exposure.

4.   The environment for storing storage should be kept T dry. Do not place the battery in diced water or the ground that may leak. square.

5.   Mechanical impact, crush or puncture the battery, and it is forbidden to drop or short-circuit the battery.

6. Do not store or transport batteries with glasses, watches, metal necklaces, hairpins or other metal objects. Do not have a damaged battery or a high 60% battery.

7. The smart battery is not required by the airline for air transport o

8. Battery for self-discharge storage function, when the power is high long time storage (greater than the set discharge time] battery automatic discharge to 60 to improve the battery life (battery long time does not make Sichuan battery, storage d appropriate temperature environment, for battery automatic discharge, and at least every 30 days out a charge>

9.   If you need not to use the Sichuan battery for more than 10 days, please fill the battery, the battery will automatically discharge to 60%, the battery storage self-discharge mode (Ell full discharge to 60% takes about 2.3 out time, the temperature of the battery may rise during the discharge process, this is a normal phenomenon" into the state, causing damage to the cell. Will not be able to restore Sichuan.

11. If the battery is seriously insufficient and idle for too long, the damage battery into the state, do not make Sichuan.

4 Battery maintenance

2. Do not charge the I II battery charger at a high or low temperature.

3. Do not store batteries at temperature 45. <: Or low T 10%: in the environment.

5. Aircraft hover and maintenance: use the charger to fully charge, Sichuan aircraft hover to 50-60% power namely

Appendix 3: SouthGS Ground station control software specification

1 Operation entry

1.1 shows the symbolic meaning

Show the symbol	content
V	vertical angle
V%	Vertical angle (slope display)
HR	Horizontal angle (right corner)
HL	Horizontal angle (left corner)
HD	horizon range
VD	dispersion
SD	slant-range
N	Northern coordinates
E	East direction coordinate
Z	Shang Cheng
m	In meters of distance
ft	In feet in distance
dms	In degrees of minutes and seconds
gon	Take Gorn as the angle unit
mil	Take the density as the Angle unit
PSM	Prism Constant (in mm)
PPM	The atmosphere is changing
PT	call the roll

1.2 First-time boot interface

For the first time, the row 2.0 on the rocker will pop up the installation guide interface, and the user can choose to skip according to their needs. For the first

time, the guide industry introduces the new functions of 2.0, to help users better understand the new changes brought by 2.0.

Photogrammetry of the 3D route planning

One-key transfer field chang

- firmware upgrade

The main interface function portal includes the following contents:

My: This key is my module entrance, the management has no user information, wood task list, test area list, base map switch, cloud space, critical software functions:

"Planning the route: This key is to select the planning mode to enter three planning modes: photogrammetry, surround flight and belt flight:

, Flight management: the key flight management, management of uav mission flight, map transmission and other functions:

"Equipment firmware: this key is the equipment firmware entrance, managing the UAV

flight control firmware, calibration and other functions:

To start the connection: This key is to enter the connection device, retrieve the Bluetooth device around, display the UAV connection status, and connect the Bluetooth of the UAV remote control.

2 Planning routes

Photogrammetry: planning the surface area survey area, supporting multi-route planning, pos point planning and design:

Well flight: collect the facade information of the survey area:

Around around: Planning circular route:

Flight: planning the ribbon [Yi domain measurement route.

2.1 Photogrammetry interface

The top of the photogrammetry can display the mapping area, R flight range, estimated flight time, route interval, minimum photo interval, and survey number of the current route mission.
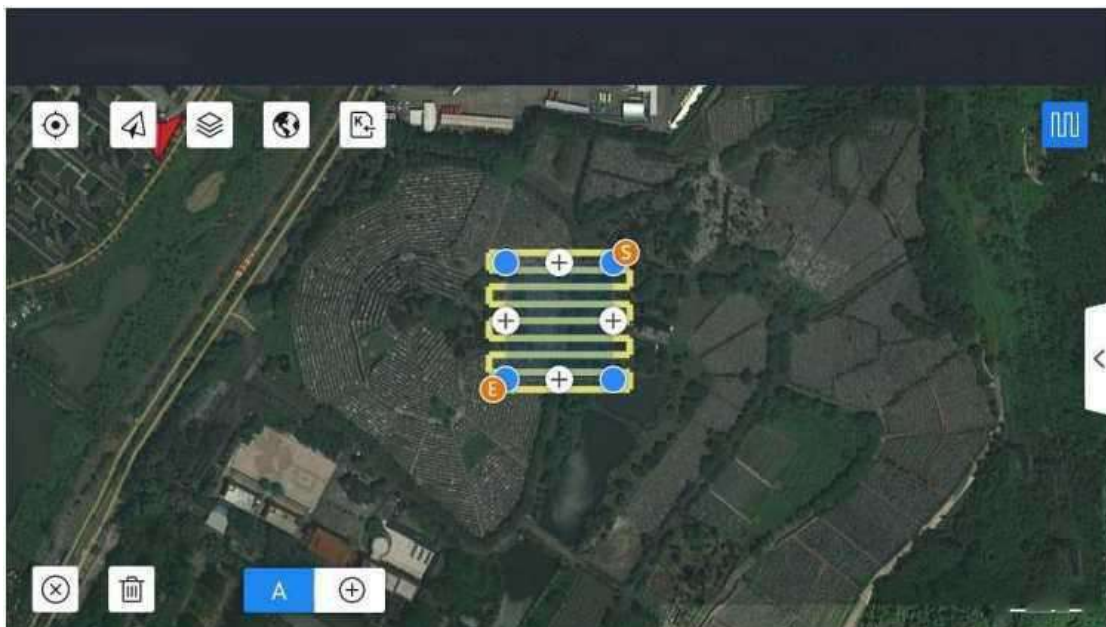
: Switch the map display small layer (vector ground imitation

map, satellite image map)

 : Position to the current tablet location:

 : To the point where the drone is located

 : Import kml base map, auxiliary map display: import dem data for

 : The kml test area can be imported for the test area route

planning:

 : Delete the current test route:
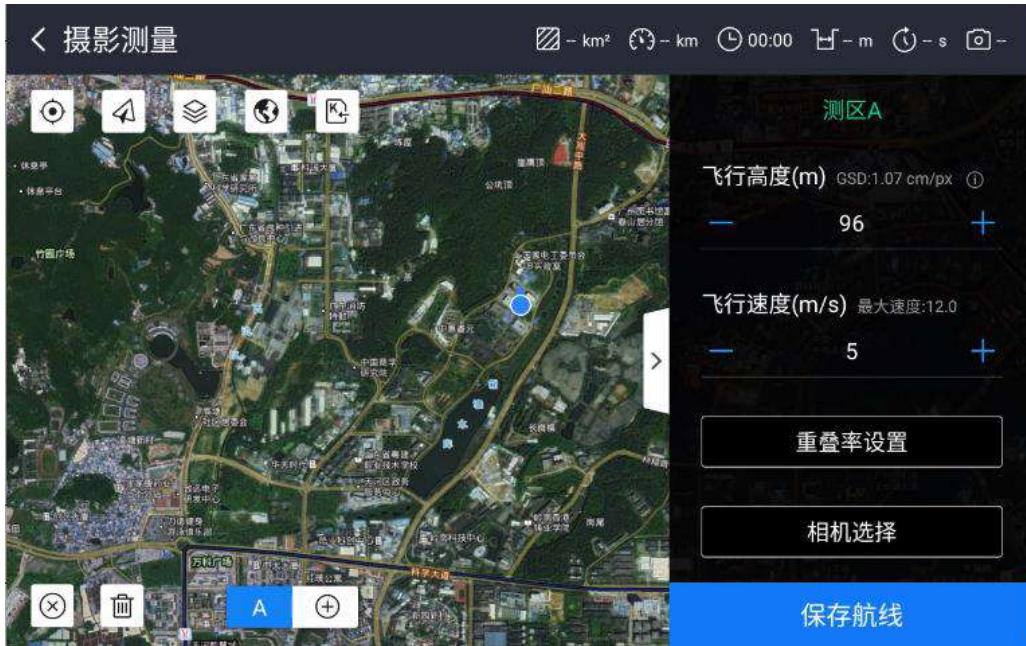
 : Delete the selected zone control point:

 : Select routes and add routes:

 :Show the route.

The menu bar hidden by the arrow on the right side of the dot coin, as shown in the figure:

R row height, degree: set the aircraft execution route mission altitude: (relative to the takeoff point height)

R line speed: Set the aircraft perform route mission speed:

Overlap rate setting: Set the photo critical stack rate of flight

photography, including heading and lateral overlap rate: " Camera selection: Set the camera model of Sichuan made by flight photography and edit the camera information.
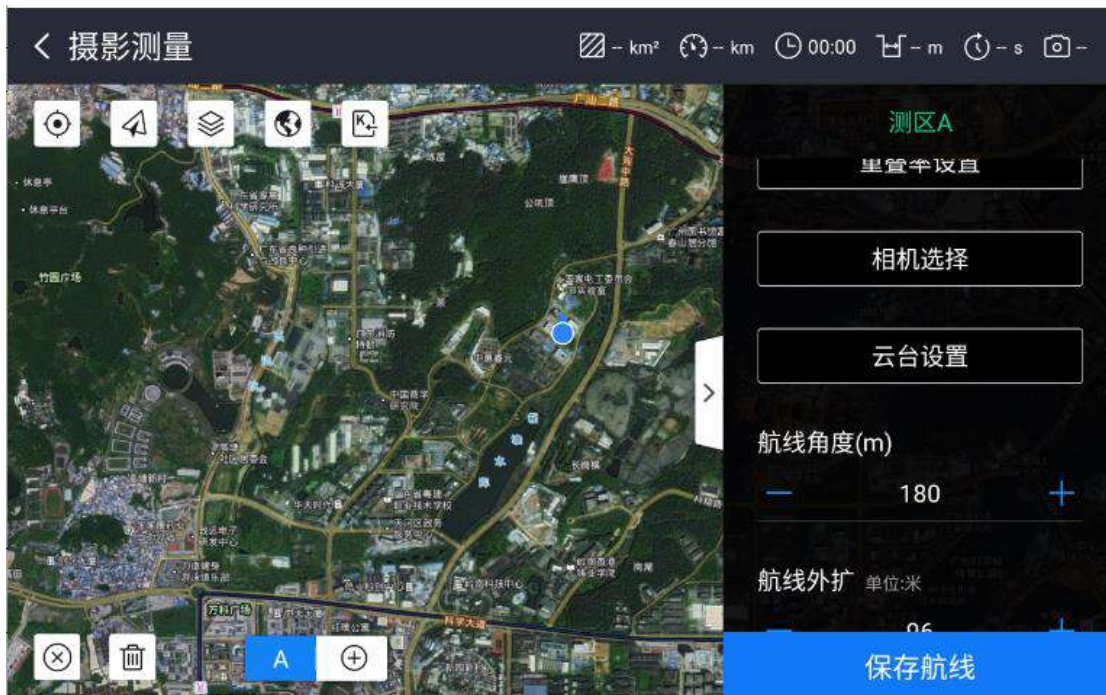
Si platform setting: Select the Si platform Angle of the mounted
lens:External expansion of dirty line: set the planning route
relative, expand the range outside the target test area:Radar
imitation flight: radar imitation flight switch, and imitation
flight mutually exclusive, under the condition of carrying lidar.
Final flight altitude = radar detection altitude

+ setting.flight height:
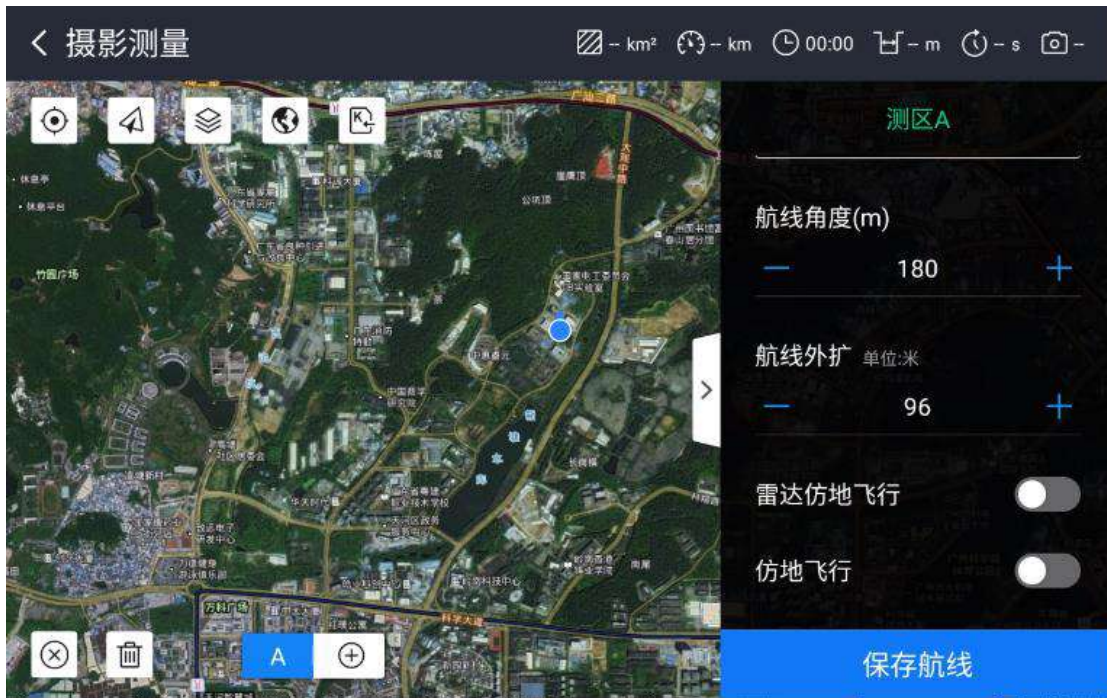
> Imitation flight: Set whether to use imitation flight:
> Save routes: jump to the route secondary confirmation page

In the [Camera Selection] interface, click on the upper right corner to open the
attribute setting interface of the camera, as shown in the figure:

In this world, you can input the camera name, photo resolution (wide), photo resolution (high), sensor size (wide), sensor size (high), camera focal length information for saving. When planning the route, you can make the nuclear camera parameters. After selecting the laser lens "S61 40mm" in [Camera Selection].
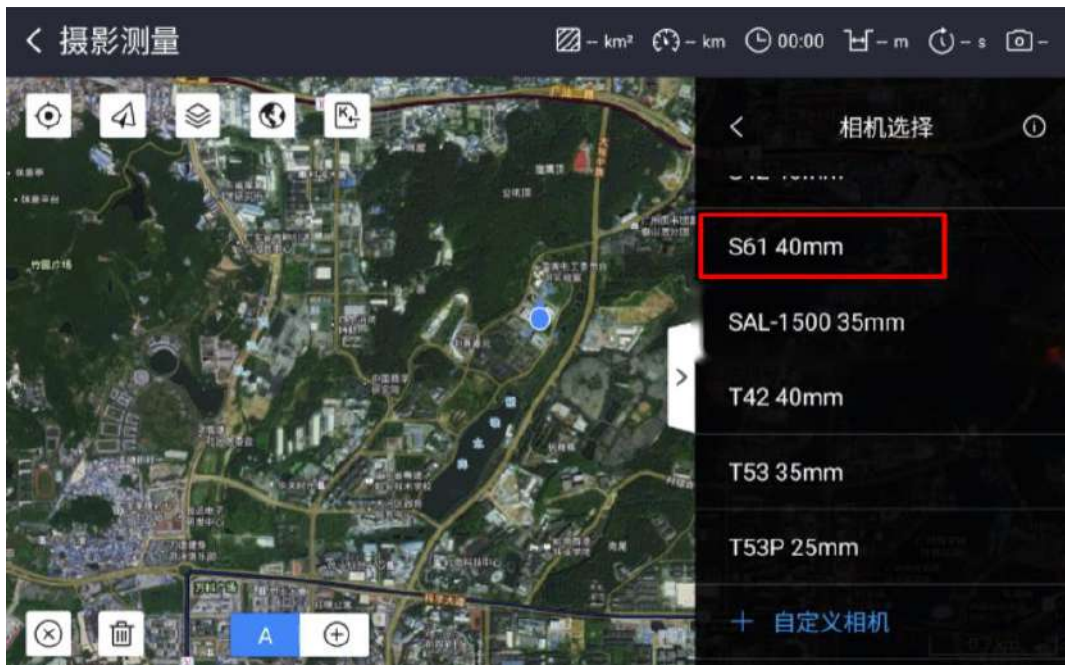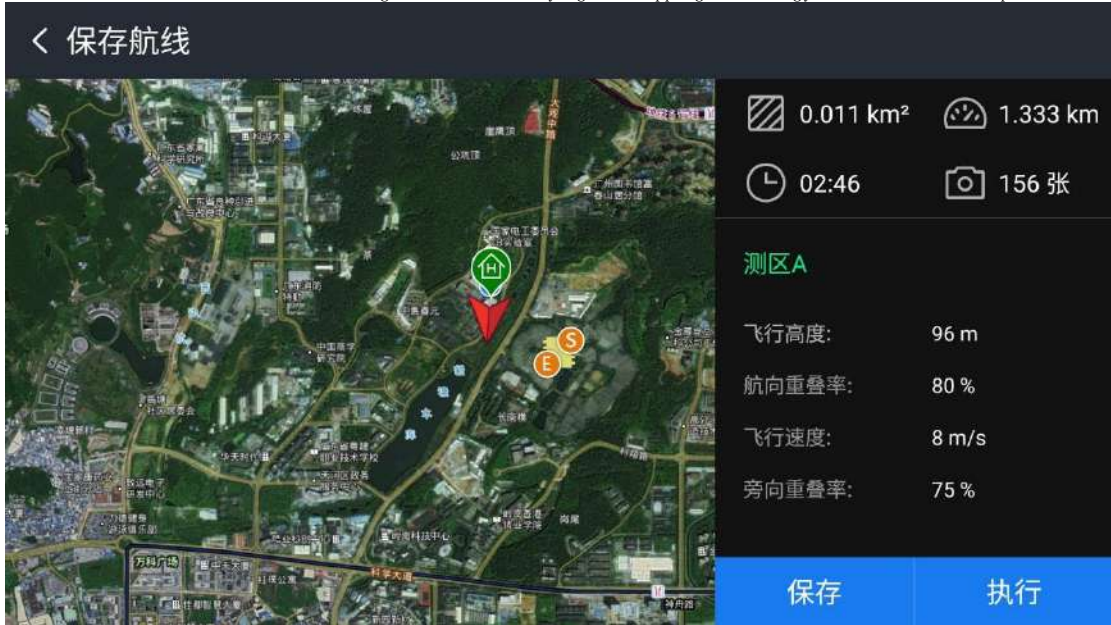
Point record [save], save the route in the mission, which can be opened and executed in the [task] in the flight management interface: or click [execute] to directly jump to the flight management interface to perform the route task.

Before saving the route, you need to enter the name in the file input box, and click OK to save the route.

2.2 Airborne belt flight

Entering the flight flight boundary, open the right arrow and enter the flight belt parameter setting, as shown in the figure:
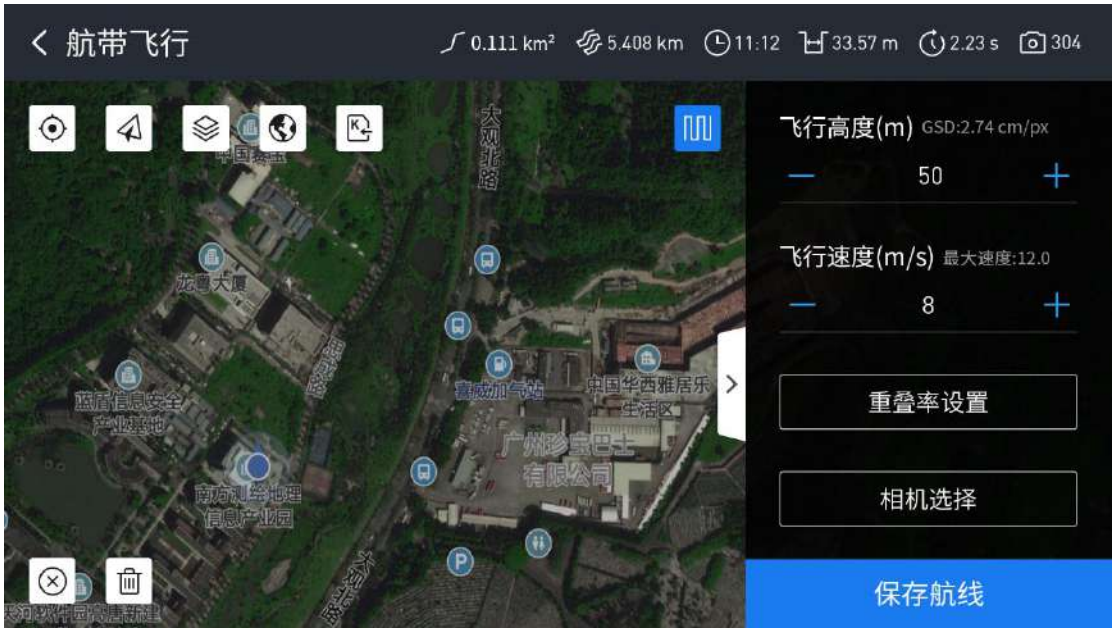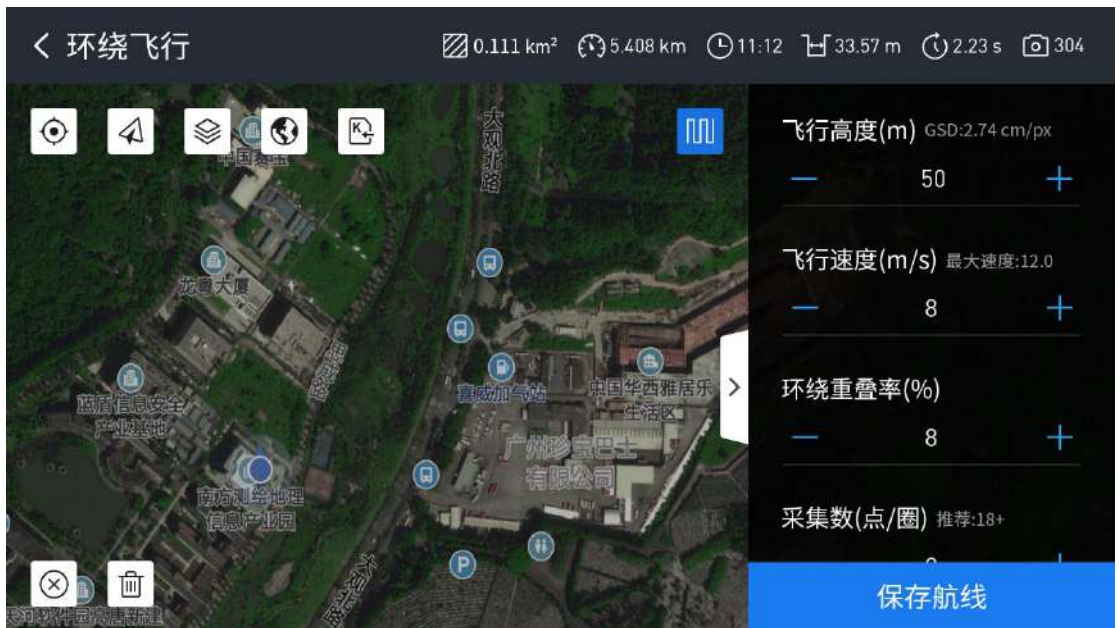
The flight parameters of the flight belt advantage camera tester parameter setting to be different is the [route direction] can be inverted, can be set in the route setting. Whether the navigation belt [contains the center line].as shown in the figure:

2.3 Around around

Enter the surround flight interface and open the right parameter setting, as shown below:

Unlike other planning methods, the [R row height] is the radius of each circle. In addition, surround flight increases the [surround overlap rate] and [acquisition number].

2-4 well-word flying

The facade information of the survey area is collected by the well flight. In The tilt task of high and low resolution.
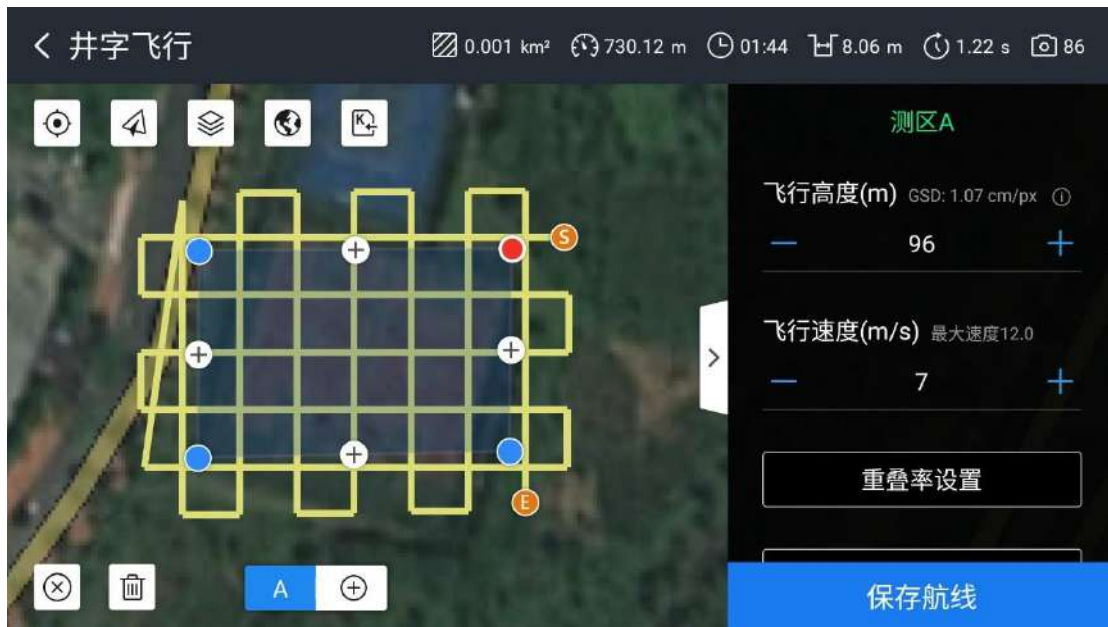
The overlap rate of frillT is set to the overlap rate of two different headings, Parateral overlap, need to improve the lateral overlap rate, as well as keep 60

2.5 Flight management

Every time the company open the app, when you enter the flight management interface for the first time, the window selects the joystick mode, as shown in the
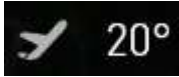

Enter the flight management interface, as shown in the figure, the left of the icon, can choose the planned route task.

 :Current UAV flight Angle

 :Current UAV elevation angle
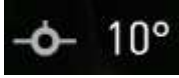
 :Current UAV horizontal Angle
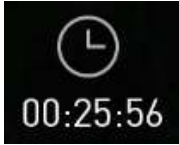
 :The drone has served on the duration of the mission:Current number of drones

 :The range of drones in the current route

 :Current horizontal flight
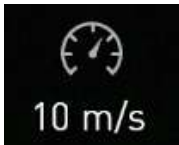
 :speed of the UAV

 :The current flight altitude of the UAV

 :Straight-line distance between the current UAV position and the takeoff point

 :Current status:

 :Current charge of the UAV

 :Number and status of GPS1 satellites (poor, good):

 :Number and status of GPS2 satellites (invalid solution: single point solution: difference decomposition: floating point solution: fixed

:Remote control and UAV signal volume: solution)

:Flight parameter control, sensing obstacle avoidance setting, rocker mode selection, intelligent battery information, Tongchuan setting work ability.

When equipped with a lidar lens, the bound and I. Add the "lidar connection status" item to the section information bar.

（1） Successful laser connection: the word "Ladar" in the upper information bar of the flight management interface is green;

（2） Laser connection failure: flight management field and the word "Lidal" in the upper information bar is red: UAV operation, check before operation select the route task in the mission, the system will check the UAV environment before operation, please see the specific content, as shown in the figure:

作业前检查

- 计划起/返航点高度   50 m
- 测量区域最高点高度   100 m
- 测量区域最底点高度   100 m

✅ 航线调用成功！

⚠️ 当前网络异常，未能获取区域飞行安全数据！

取消   继续

作业前检查

- 飞行器GNSS   优   固定解
- 作业完成行为   返航
- 返航高度   100 m
- 飞行速度   100 m/s

向右滑动自动执行 >>

取消

The device: Real-time access to the status of the UAV is convenient for Chuanhu
Not ready, security switch is not unlocked, equipment is not connected, equipment
is already connected:

: Control the return to the take off

point : Control the aircraft maggot ground

landing:

（1） After successful landing, automatically lock the UAV:

（2） If equipped with lidar, lock the lidar during descent or during drone
locking:

:Control & aircraft to automatically perform air route tasks;

: Control, machine in, current position hover;

: Drone message, similar to the Mission Planner message, Kawato can view the plane message in real time

2.6 Flight report

Route execution complete or suspended after landing, the software will show after the drone task [R line report], if the cloud route will automatically upload the flight report to the UAV: if the current network, or no network cause flight report cannot upload, later when the network situation, can be in [my-task-manual upload

When equipped with a lidar lens, the flight report adds two data reports:

飞行报告

- 任务名称 ···
- 作业人员 ···
- 拍照点数 ···
- 飞行里程 ···
- 点云文件 ···
- 完成进度 5%
- 开始时间 ···
- 完成时间 ···

我知道了

3. Control and parameter description

3.1 Flight control parameter control

> Return height: set the return altitude when the UAV operation is completed

> High limit: set the maximum flight altitude of the UAV

3.2 Perceived obstacle avoidance setting

Sense the obstacle avoidance setting interface.

Start the obstacle avoidance system. When the UAV R line occurs, a radar warning map will appear at three 10,000 bits in the direction of the UAV & line to remind Chuanhu to pay attention to the obstacles.

3.3 Joystick mode

Shaker mode world and, in this world and can choose their own knife used to the stick mode.

3.4 Smart battery information

Energy battery information interface. The value of the power alarm can be set dynamically., The three ICONS from left to right represent [current battery voltage],

3.5 General Settings

General Settings interface: mainly do general Settings.

Map selection: choose the way to carry the software map, no Baidu map, big map and Google map three options

Choose, the default is the map of heaven, can also click the upper right corner of the box) add custom layer.

Display track: set whether the small route track is displayed

Display GPS: Set whether display GPS information. Display photo point: Set whether display small visible photo point information. Mount Selection: Select the corresponding mount of the UAV and send the correct instructions. Includes mount: camera,

Southern lidar (showing Lidar and BOOT versions), Tongchuan lidar, Southern Yuntai.

3.6 Picture transfer interface

In map mode, click the lower left area to enlarge the map and observe the video information more clearly. There is no height scale on the right, which can know the current flight altitude in real time when watching the video.

> Settings (when mounting the lidar): the dot coin button starts the video address configuration window

>Set up (when mounting the Tuowei lens): click the button to start the photo mode selection: single shot, continuous shot, scheduled shot,

>Delay shot: long press the button to start the video address configuration. window Uo

> Set (when mounting T42 lens): click the button to start the video address configuration window

>Photo mode

> Video mode

> Photo / Record screen button

>Gallery: store photos and videos taken by the transmission, and view and delete them

 altitude variation

> Point cloud file size: the file size of the monitoring point lost during the flight under the front of carrying [lidar]

3.7 Task list

The task list shows the planned routes, including the cloud routes.

The task list classifies the task completion status, and the user can select [not executed, executed, completed] to filter and view the route task. On the left side of the figure is the task list:
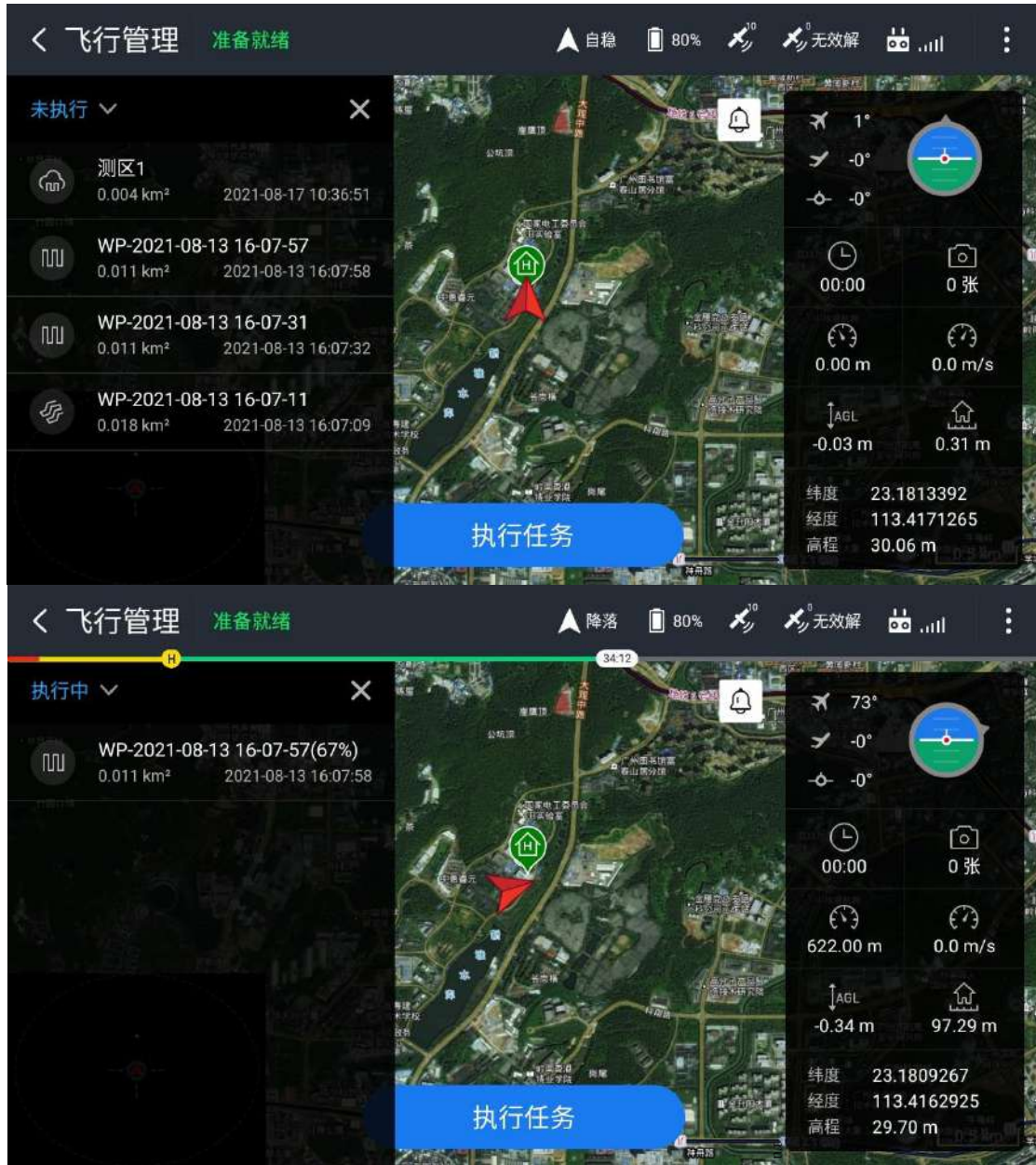
3.8 Drone vehicle inspection

Take-off and inspection is a necessary part before each flight, which can not be ignored, omitted or randomly checked, otherwise it will lead to flight accidents. Taking off, please check:

1）, Whether the propeller is stuck or not

2）Whether the motor rotates smoothly

3）Whether the machine arm is tightened

4）Whether the large network cable is installed in place

5）Whether the camera works properly

6）Whether the take-off site is empty

3.9 Equipment firmware

In the equipment firmware interface, the right side displays the UAV related information such as product model, payload type, firmware version and reference Several versions, and you can operate on the drone.

>Flight firmware: check the flight firmware for upgrade:

> Firmware parameter: discover and update the UAV firmware parameter version:

>Body PPK firmware: Check the PPK firmware for upgrade:

>Clear flight control cache: Clear flight control firmware storage:

> Accelerometer calibration: Calibrate the UAV acceleration equipment:

Cass calibration: Calibrate the drone compass equipment:

Network CORS: Equipped with UAV CORS account, connected to aircraft WiFi:

SIM card information: enter the web page to view, recharge the esim card traffic, add the esim suspension frame, and see the relevant public

The number of information.

  （1） View the data plan: connect the UAV WIFI network and enter [Network CORS] to obtain ICC1D, click this button to enter the data query recharge world.

  （2） Add to the front page: Click this button to display the esim floating box on the home page I: square.

4 User interface description

4.1 User functions

  The functions of the user module should include the registration, forgetting the password, and changing the password after success.

  Sichuan household login: if you already have an account, you can log in through your mobile phone number and password.

4.2 Task list

The task list displays the routes stored locally and filters the time periods to view the task. Route files can be edited and deleted. Each route task displays the route name, route type, ground imitation, and creation time information.

: Filter the list file according to the time, no last 3, last 7 days, last 15, a

select:The default is for the last 3 days:

: Move upload R line report, only when switching to eight items:

: Around flight routes:

: Photogrammetry route:

: Belt flight route:

 air line.

Click the route task, and the editing box will pop up to view and edit the route and modify the flight point.

-See the route information interface:

Flight point: If the mission has already started, you can choose where to start flying in this field

4.3 Survey area

Test area list exhibition small J'measurement area

: In the test area, click the entry, app will determine whether the linear test area or the facial test area will automatically jump

: Go to the navigation belt 5, and the photo tester interface for planning the survey area.

4.4 Bottom chart

The project base map is stored here to show the no base map under the project.

4.5 About

This interface displays the current software version wood number, and you can check for software updates.


4.6 List of cloud space projects

From the [task] boundary, enter the [project list] interface, which shows the list of no projects of K Deng Xing users, including local items and cloud projects.

Point the day 20, enter the folder, view the cloud test area, you can choose to download the route and test area under item H and save to the local.

Click the ⊕ button, and the window will pop up. Enter the mobile phone number and sharing code of the sharing item to add the cloud item 20 shared by other people's

account. It is worth noting that from the UAV planning route or test area, will be downloaded with a base map.
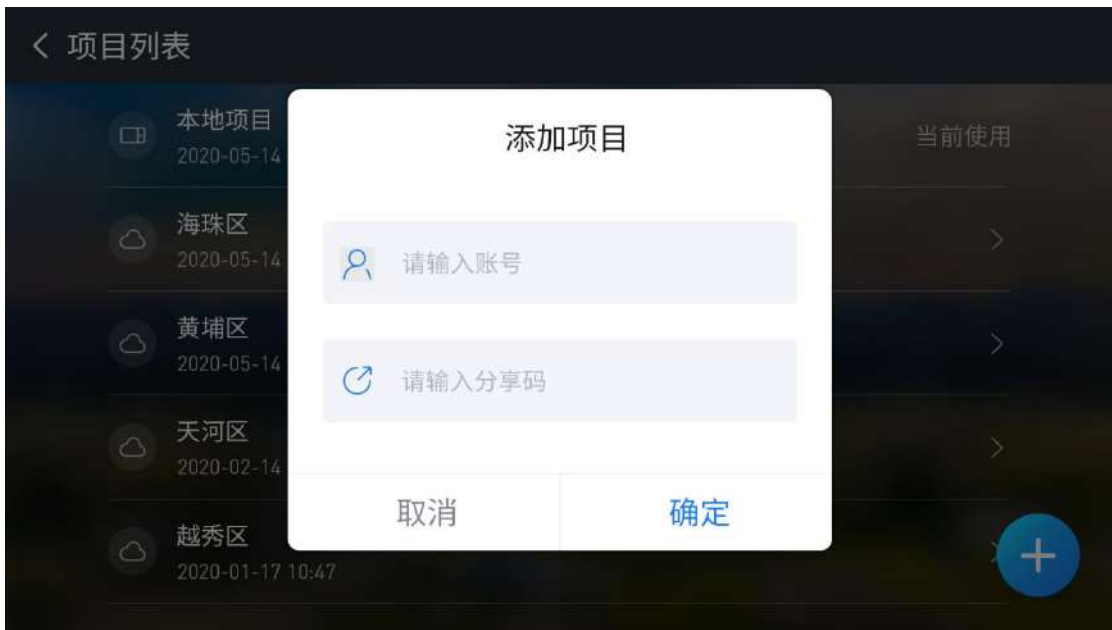
FCC Statement

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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

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.

RF Exposure Information

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.