PRODUCT ENGINEERING / OPERATION DOCUMENT

SV-M30

Operation document and configuration review

Source: 29 Jan 2026 / Prepared: 20 Oct 2026

Original operating chapters are retained in this language. Controller and flight-mode procedures differ between the supplied Chinese and English documents. Use the procedure confirmed for the installed controller; do not combine versions. Technical values are retained. The original English disclaimer includes legacy crop-dusting wording. It is retained as source text, not as a statement of cleaning capability or current operating scope.

1. Purpose

SV-M30 drone manual and operation instructions.

2. SV-M30 Drone

2.1 Specifications

S/N	Items	Content
1	Diagonal Distance	2050㎜
2	Extended Dimension	1570㎜×1570㎜×715㎜
3	Folded Dimension	845㎜×860㎜×775㎜
4	Total Weight	36kg

2.2 Power System-Motor

S/N	Items	Content
1	Number of Motors	4
2	Max Output (single motor)	7900W
3	Rated Thrust (single motor)	18kg
4	Rated payload	30kg

2.3 Propeller

S/N	Items	Content
1	Propeller Material	Carbon Fiber
2	Length/Pitch	43×13.5 inch

2.4 Remote Control

SV-M30 Remote Control

Functions of Remote Control

●Mode switch (E): 3 levels (U-GPS /AB mode / U-GPS)

●Throttle direction: American mode

●On/Off for spraying (A): On, spraying button light is on; Off, spraying button light is off.

●Power On/Off: Push two buttons in 2 seconds/On/Off.

●A/B position (F): right/middle/left modes: Pending mode (default), recording A point, recording B point

●Roll & pitch: Right hand/stick for Pitch and Roll

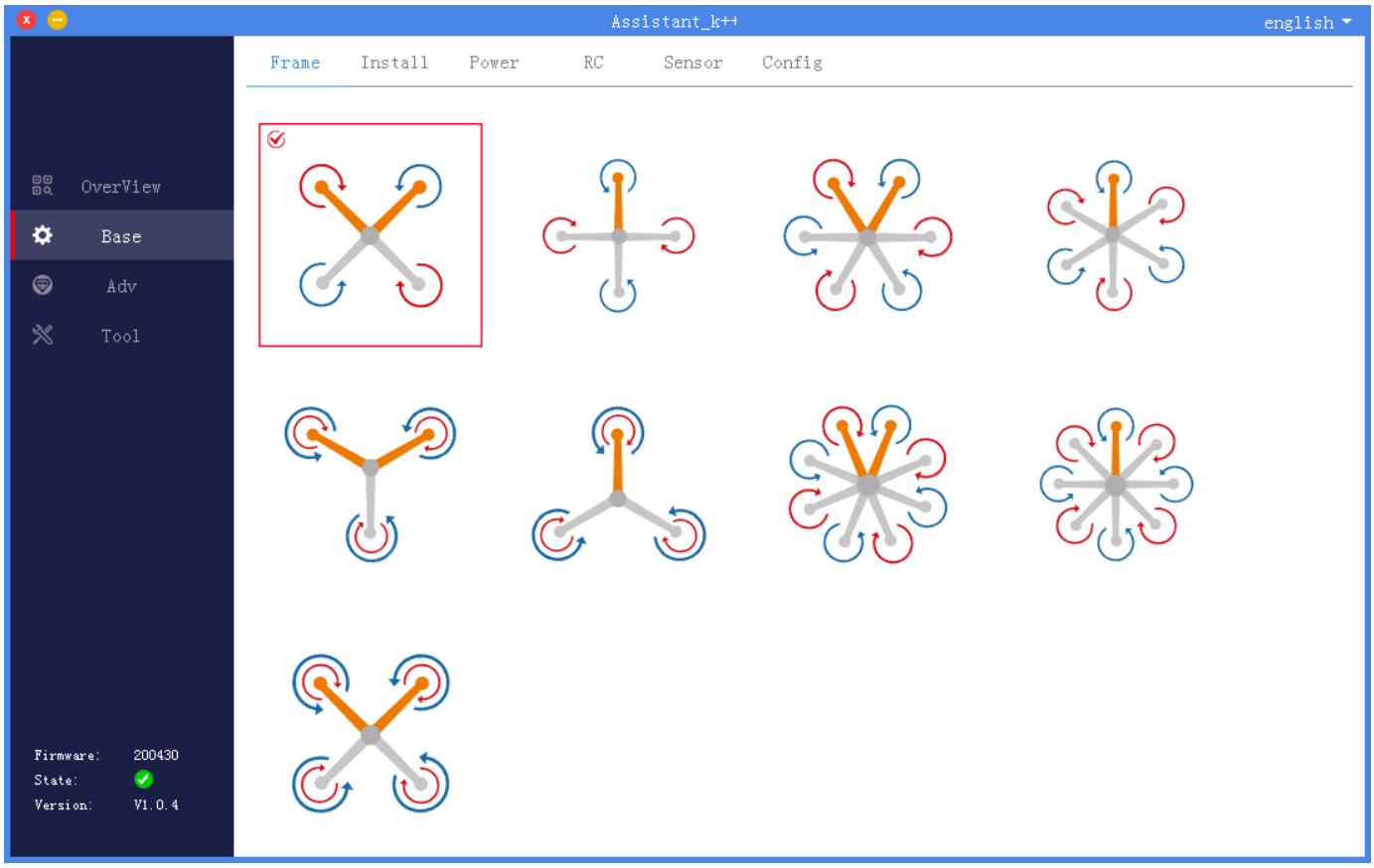
●One click return (B): Pending mode (light off default), returning mode (light on)

2.5 Basic function settings

The flight controller is installed on the aircraft for the first time, and you can use the assistant software to perform the following basic function setting steps before normal flight.

2.5.1. Rack selection

Click to enter the basic interface of the assistant software, select the rack in the upper menu bar, as shown in the figure, and select the correct rack according to the actual flight control aircraft. The direction of the yellow arm in the picture is the head direction.



2.5.2. Installation settings

Click to enter the basic interface of the assistant software, select installation from the upper menu bar, as shown in the figure, choose the correct orientation according to the actual installation direction of the flight controller and GPS.

1) .IMU orientation

The direction of the IMU is the installation direction of the flight controller. The red arrow facing the IMU indicates the

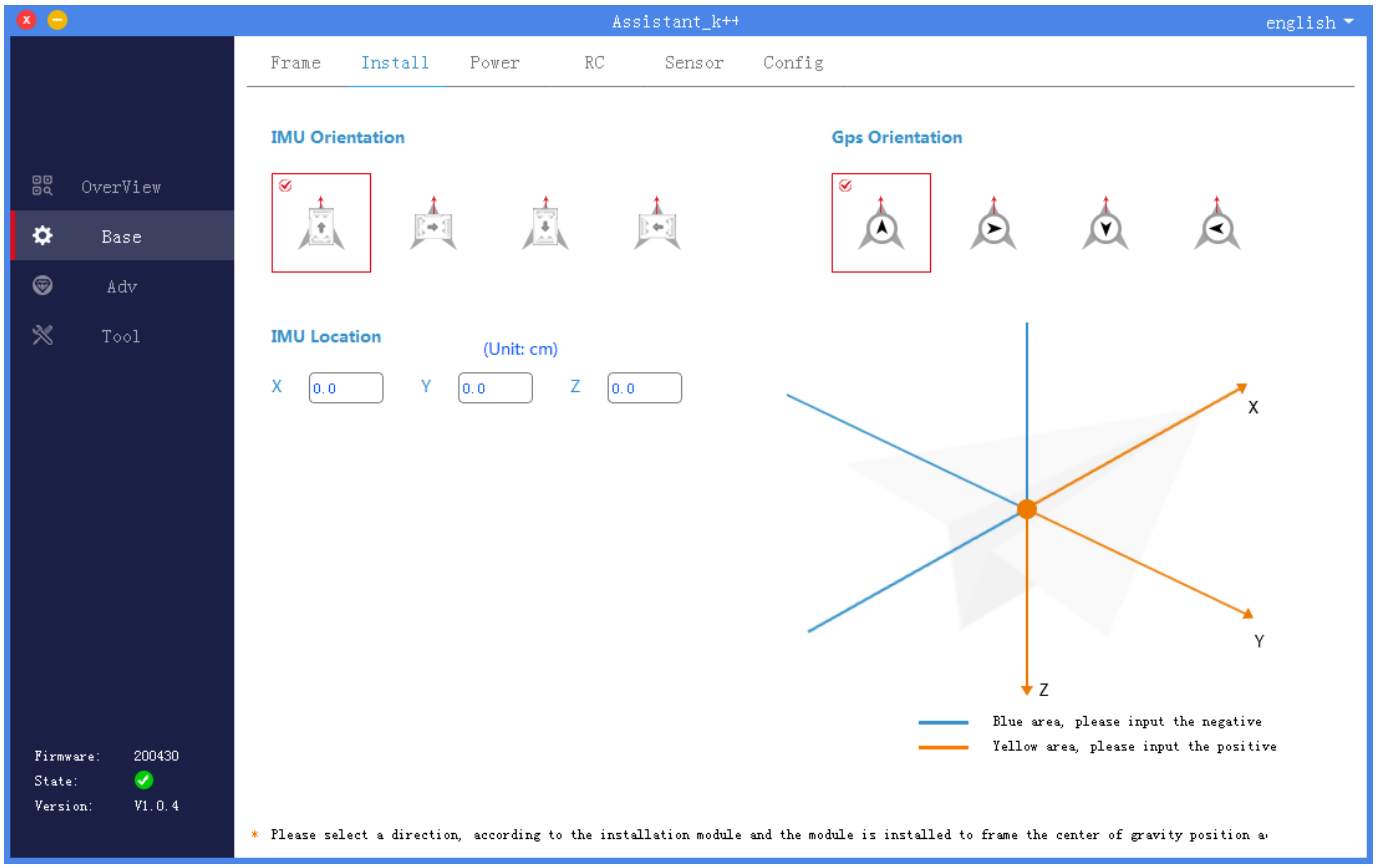
nose direction, and the gray arrow on the flight controller indicates the direction of the flight controller. The wrong choice can lead to serious flight accidents.

2) .GPS orientation

The red arrow of the GPS direction indicates the nose direction, and the black arrow of the GPS direction indicates the GPS direction. Please ensure that the set GPS direction is consistent with the actual GPS installation direction. If using dual GPS modules, please ensure that the two GPS installation directions are the same. The wrong choice can lead to serious flight accidents.

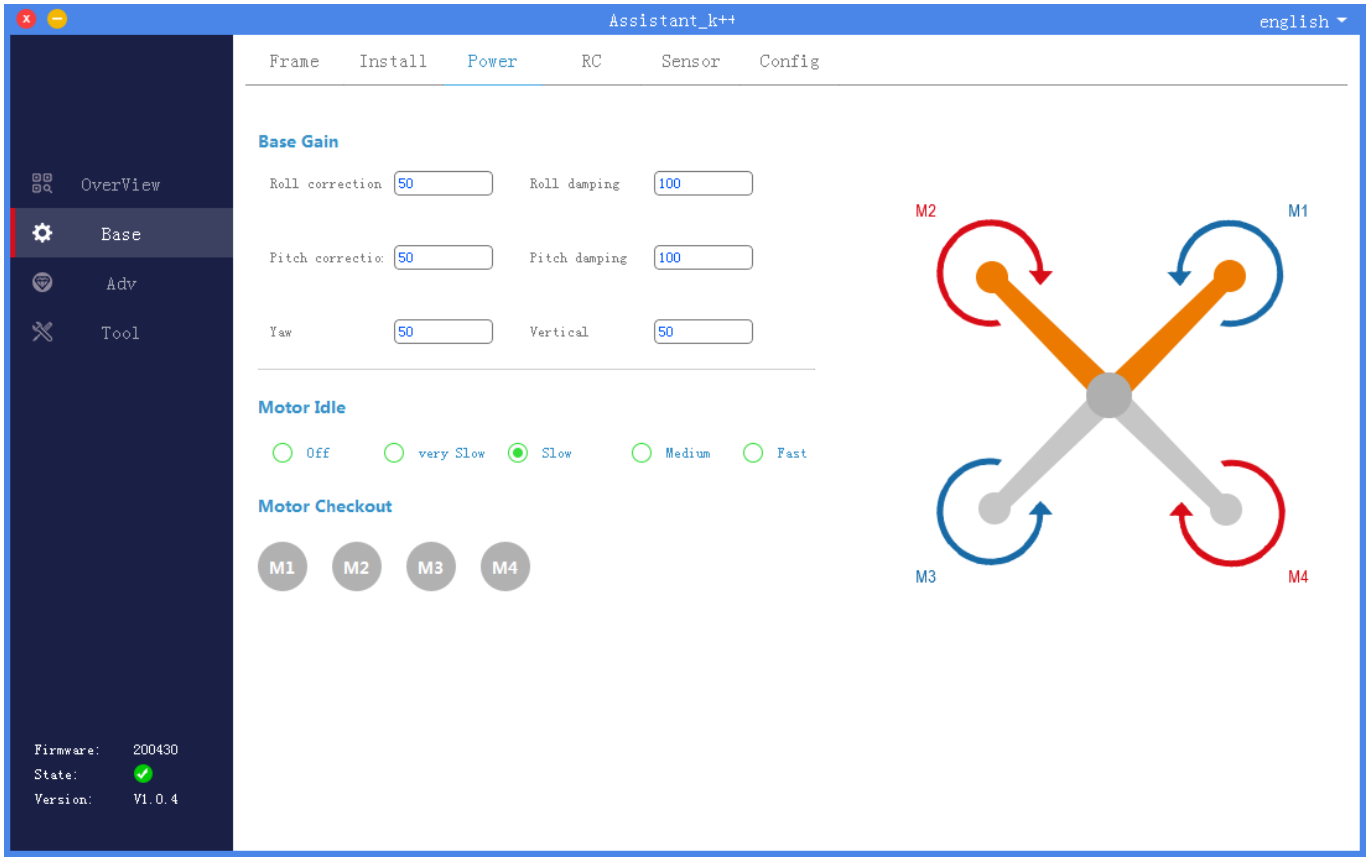
3) .IMU location

For users with high requirements for flight performance, ordinary users can leave it alone. According to the distance between the flight controller and the center of gravity of the aircraft, fill in the IMU installation position correctly.



2.5.3. Power configuration

Click to enter the basic interface of the assistant software, select the power configuration in the upper menu bar, as shown in the figure, including basic sensitivity settings, motor idle speed selection, motor sequence detection and motor serial number.



1). Basic sensitivity setting

Basic sensitivity includes roll correction, roll damping, pitch correction, pitch damping, yaw, and vertical. It is mainly used to adjust and adapt to the rack. The function definition of each sensitivity is shown in the table.

Roll/pitch correction	It is used to adjust the attitude control adapted to the aircraft. It is the correction force for centering and stick control. If the aircraft attitude is weak and weak, it should be increased; if the movement is stiff and exaggerated, it should be adjusted down.
Roll/pitch damping	used to adjust the attitude control of the aircraft to resist external disturbances. If the aircraft attitude is high-frequency jitter, it should be adjusted down; if the movement is stiff and there are many small movements, it should be adjusted up.
Yaw	It is used to adjust the yaw control of the adapted aircraft. If the aircraft lock cannot be locked, the sensitivity should be increased.
Vertical	It is used to adjust the height control of the adapted aircraft. If the aircraft twitches back and forth, the sensitivity should be reduced.

Basic sensitivity debugging steps:

a. First adjust the vertical sensitivity, adjust it under no-load conditions, and slowly increase the vertical sensitivity until the aircraft twitches up and down, and then adjust the sensitivity back to no twitch.

b. Adjust the roll / pitch damping sensitivity again, and slowly adjust it from low to high according to 10%, until the aircraft appears high frequency jitter or the motor noise increases significantly, then fine-tune the sensitivity back to normal conditions.

c. Then adjust the roll / pitch correction sensitivity, press 10% slowly from low to high, until the aircraft shakes, the motor sound is abnormal or exaggerated, and then adjust the sensitivity back to normal conditions.
d. Finally adjust the yaw sensitivity. In general, if the default parameters do not appear to lock the head, you do not need to adjust it. If the head does not lock, increase the sensitivity.

2). Motor idle speed selection
It is used to set the idle speed of the motor after the aircraft is unlocked. Disabled means not to rotate. From very slow to fast, it means that the speed that can be reached by clicking is faster.

3). Motor sequence detection
Used to test the rotation direction of the motor. When using this function, connect the power battery and remove the propeller.
～ M4, the corresponding motor will rotate at idle speed. Please ensure that the motor serial numbAfter clicking the circular buttons M1 ～ M4, the corresponding motor will rotate at idle speed. Please ensure that the motor serial number, steering and diagram are consistent.

2.5.4 Remote control settings
Click to enter the basic interface of the assistant software, and select the remote control in the upper menu bar. As shown in the figure, you can select the remote control type, remote control flight mode channel settings, and runaway protection settings according to actual requirements.

1) .Remote control type
K ++ flight control currently supports SBUS type remote control.

2) .Remote control calibration
Note: The remote control must be calibrated when using or replacing the remote control for the first time.
Click the “Joystick Calibration” button to start the joystick calibration. Turn on the remote control at the same time, and move all the joysticks of the remote control back and forth between the maximum and minimum positions, and confirm that channels 1 to 4 of the remote control are roll, pitch, throttle, and yaw respectively. After calibration, return 1 ~ 4 channels of the remote control to the middle position, and then click the “Calibration End” button.

3) .Flight mode setting
The 5 channels of the remote control are used to map the flight mode. Three flight modes can be set in the K ++ assistant software: ATT (attitude mode), manual operation (GPS mode), and AB execution (AB operation mode). Subsequent chapters will explain each flight mode in detail. By default, the three positions of the 5 channels are all ATT mode. The user can click the drop-down menu to the right of the three positions to select another mode.

4). Runaway protection settings
Runaway protection is used to set the flight behavior of the remote control when it is out of control, including automatic

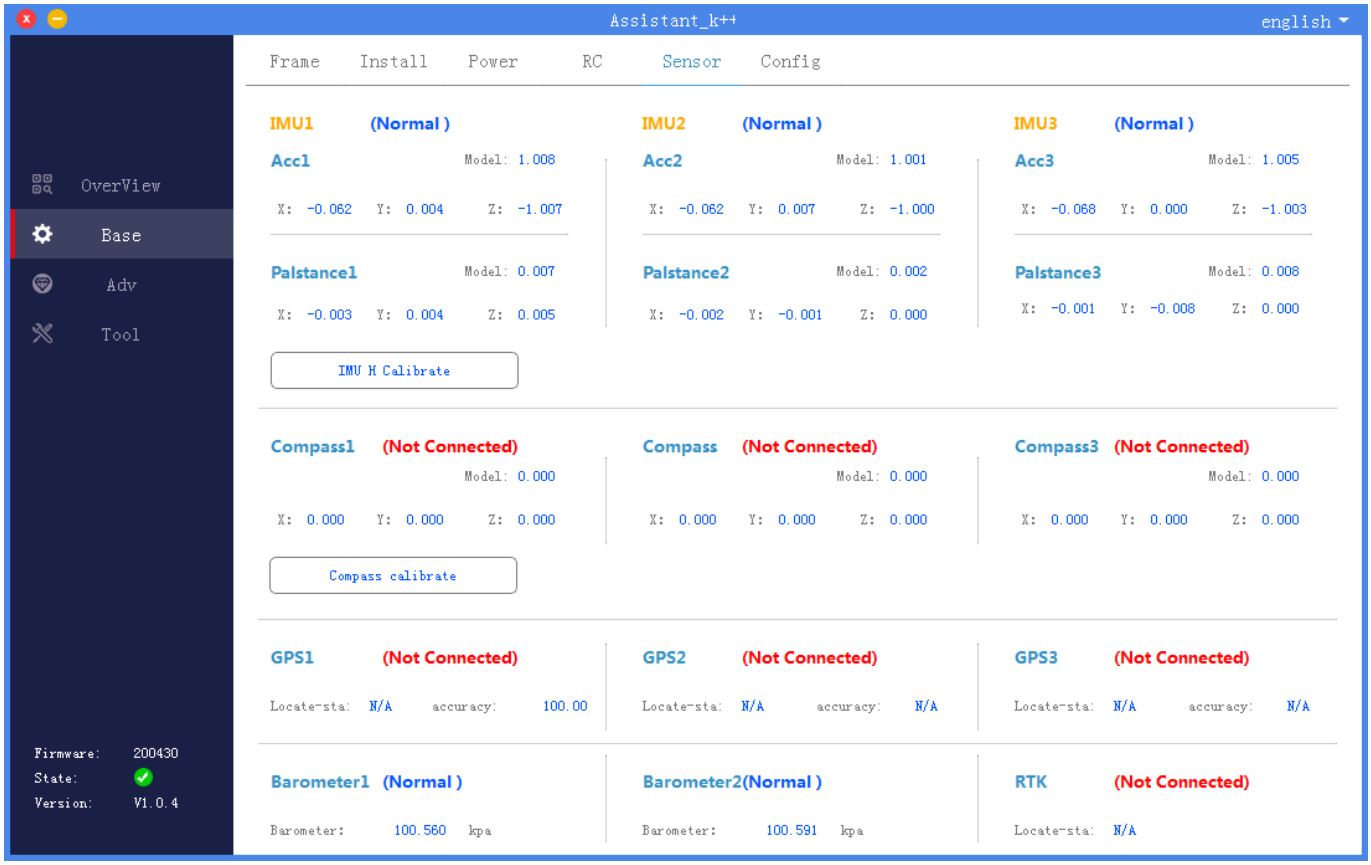
return, automatic landing, automatic hovering and landing after hovering.

5). Run out of control to continue route setting

When the out-of-control continue operation option is enabled, the out-of-control protection will not be performed after the remote control is out of control in the operation mode (AB operation, route operation), but the operation task will continue to be performed. It is recommended to use this function with the radar.

2.5.5.Sensor

Click to enter the basic interface of the assistant software, select the sensor in the upper menu bar, as shown in the figure, check the flight control IMU and GPS sensor parameters, and perform accelerometer calibration and magnetic compass calibration. When you click calibration, the assistant software will prompt Instructions, just follow the interface instructions.

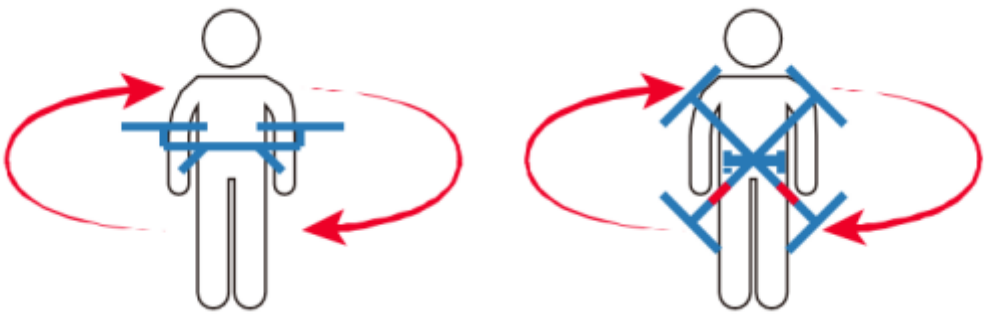


1) .IMU calibration

Place the plane horizontally and click the “IMU Horizontal Calibration” button. Calibration will be completed after 3 seconds. If the body is placed at an inclined angle during calibration, or if it is shaken, it needs to be recalibrated.

2). Magnetic compass calibration

Click the “Magnetic Compass Calibration” button, the LED yellow light is always on, and enter the horizontal calibration. As shown in the figure, at this time, place the aircraft horizontally, rotate the nose clockwise until the LED green light is always on, and enter vertical calibration. As shown in the figure, at this time, the nose is facing downwards and rotated clockwise until the LED red, green and yellow flash alternately, and the calibration is completed.



Precautions:

a. When the flying field changes, the magnetic compass needs to be recalibrated.

b. Before calibration, please check if there is strong magnetic interference nearby.

2.5.6. Flight parameters

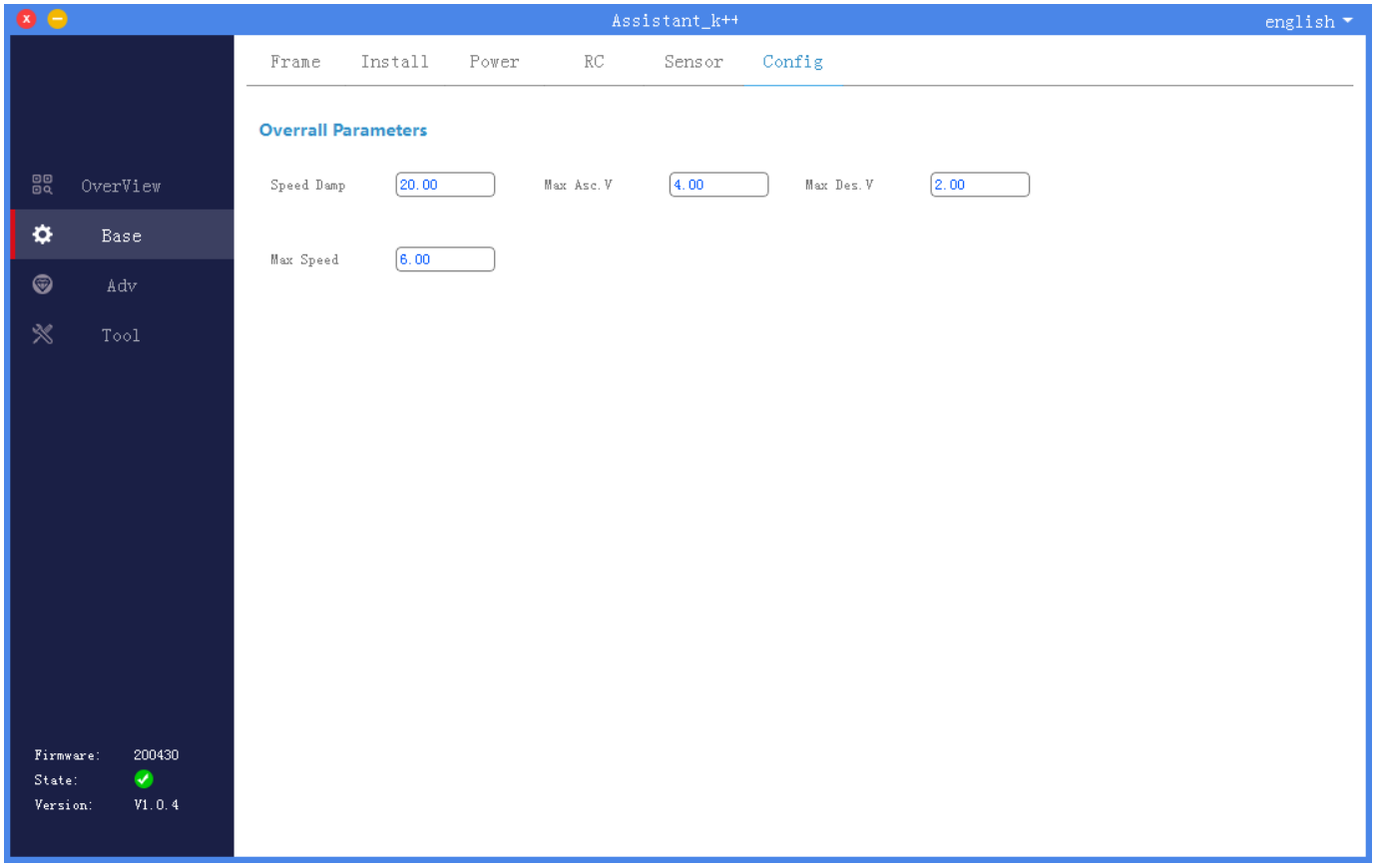
Click to enter the basic interface of the assistant software, and select flight parameters in the upper menu bar. As shown in the figure, the user needs to set the aircraft flight speed related parameters according to the actual model and operating environment.

Maximum tilt angle: The maximum tilt angle in all flight modes.

Maximum Ascent Speed: In addition to the Attitude Mode, the maximum ascent speed that the pilot can control.

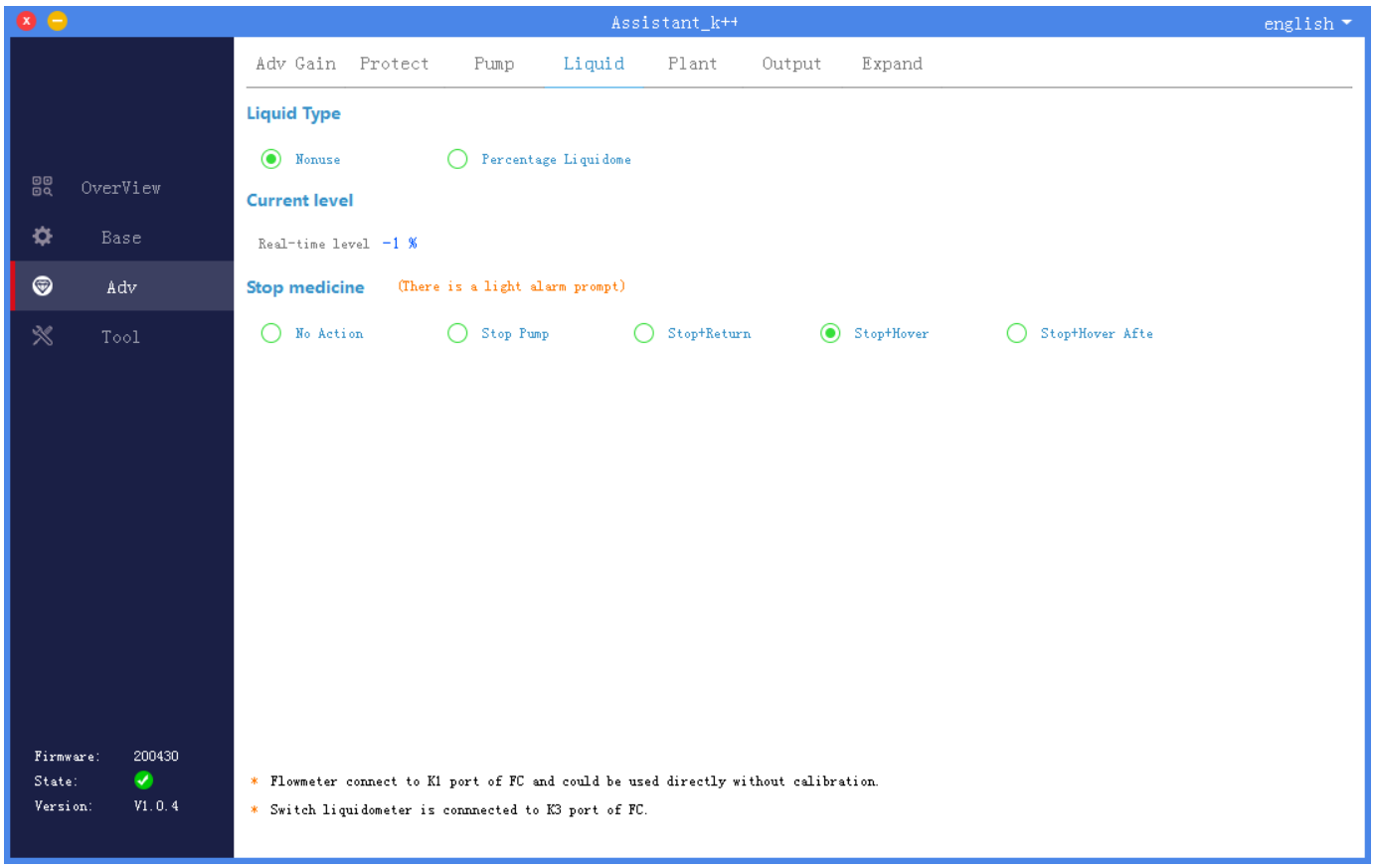
Maximum descent speed: In addition to the attitude mode, the maximum descent speed that the pilot can control.

Maximum flight speed: Maximum horizontal speed in attitude mode and GPS mode.



2.6. Advanced feature settings

Advanced function settings include advanced sensitivity, protection functions, pump settings, level gauges, plant protection functions, fence modules and expansion modules.



2.7. Flight Mode Introduction

2.7.1. Attitude mode

Attitude mode is suitable for returning to the central control user. IMU, GPS, magnetic compass and barometer participate in the flight. The attitude mode can automatically switch the control mode according to the GPS signal. If there is no GPS or the signal is not good, you can use fixed altitude flight. If the GPS signal is good, you can set the fixed altitude. There is no imitation function in the attitude mode.

1). Working conditions

Since the attitude mode requires the GPS module to participate in the work, it must wait for the satellite search to complete and the positioning accuracy to meet the requirements. As shown in the figure below, when the LED indicates that the GPS status is normal GPS signal, GPS signal is good, or RTK positioning, you can unlock or enter this mode in this mode.

GPS Representation	Light State Indication	Priority Level
GPS not connected / GPS not receiving satellite	Red Three Flashes ●●●	Low
Poor GPS signal	Red Double Flash ●●	Low
General GPS signal	Red Single Flash ●	Low
The GPS signal is very good	Red No Flash ○	Low
RTK Positioning	Yellow Single Flash ●	

Flight control can only be unlocked in attitude mode, other modes cannot be unlocked. After entering the attitude mode, the LED flashes green.

2). Operating instructions
After the GPS search is over, after the positioning is successful, the remote control switches the 5-channel mode switch to the attitude mode position. After the joystick is unlocked, the throttle motor below 50% is at idle speed. When the throttle is more than 50%, the throttle is gently pushed to take off and the throttle lever is set to 50 At the% position, the aircraft is fixed. When the aircraft is in motion, all the joysticks of the remote control are returned to the center, and the aircraft will automatically brake and hover.
The corresponding functions of the joystick are as follows

Channel 1	Control the roll angle of the aircraft
Channel 2	Control the pitch angle of the aircraft
Channel 3	Control the up and down movement of the aircraft, when the throttle is in the neutral position, the aircraft is in a fixed height state
Channel 4	Control the rotation rate of the aircraft yaw direction

2.7.2. Manual operation mode
Manual operation mode, also known as GPS mode, IMU, GPS, magnetic compass and barometer participate in the process of flight. This mode has imitation ground function.
1). Working conditions
The working conditions are the same as the attitude mode. It cannot be unlocked in this mode. You need to switch to this mode first after unlocking in attitude mode. After entering the manual operation mode, the green LED flashes twice.
2). Operating instructions
After unlocking in attitude mode, the remote controller switches the 5-channel mode switch to the manual operation mode position, and when the throttle stick is set to the 50% position, the aircraft sets the height and the fixed point. When the aircraft is in motion, all the joysticks of the remote control are returned to the center, and the aircraft will automatically brake and hover.

Caution Notice of SV-M30 installation & operation

- Do not operate during drunk, sick, fatigue, or uncomfortable status.
- Far away from crowd, residence building, school, hospital, power line, high building or telecom equipment.
- Far away from crowd, residence building, school, hospital, power line, high building or telecom equipment.

- Do not stand close or touch once the motor and propeller are running in order to avoid injury.
- Make sure the propeller be installed on the matched motor properly.
- Make sure the CW or CCW of propeller and motor same and matched.
- Make sure all the parts in correct position installed and check, change the new parts once it has damage or aging.
- Use parts supplied by SV Tech Co. Ltd.

Disclaimer

The product is NOT a toy. It is specifically designed for professionals and prohibits the use by minors under the age of 18. Please keep the product SV-M30 drone and relevant components out of reach of children and prohibit using it in a crowd or locations where children can appear. Please read this manual and all documents carefully before the use in order to make better use and understand the product. In using this product, you hereby agree to this disclaimer and signify that you have understood and accepted all the rules & points listed here. SV Tech Co. Ltd. reserves the right to update this disclaimer. The update of this statement is subject to renewal without prior notice.

The product SV-M30 is specifically designed for crop dusting & pest control etc. in all farmlands, forests, parks, and orchards. The objective for the design and service of SV-M30 is to improve operation efficiency for the market above. The performance by using SV-M30 is superior comparing traditional agri-equipments.

Please strictly abide by the installation & operation manuals before using SV-M30. SV Tech Co. Ltd. and affiliated companies including our dealers do not assume any liability and legal liability because of improper use & operation instructed by the manual or local regulations, the use of non-original parts supplied by SV Tech Co. Ltd., which causes any loss, damage, and accidents, such as by using battery, propeller, or other parts after market.

PRODUCT DOCUMENTATION

Business enquiries

Product selection · Project enquiries · Technical support

SV-M30

Zhuhai SV Tech Co. Ltd.

ADDRESS	35 Jinzhou Road, Jinding, Xiangzhou District, Zhuhai, Guangdong, China
CONTACT	**Mr. Liu**
PHONE	**+86 18688194199**
EMAIL	**lhc1983@gmail.com**