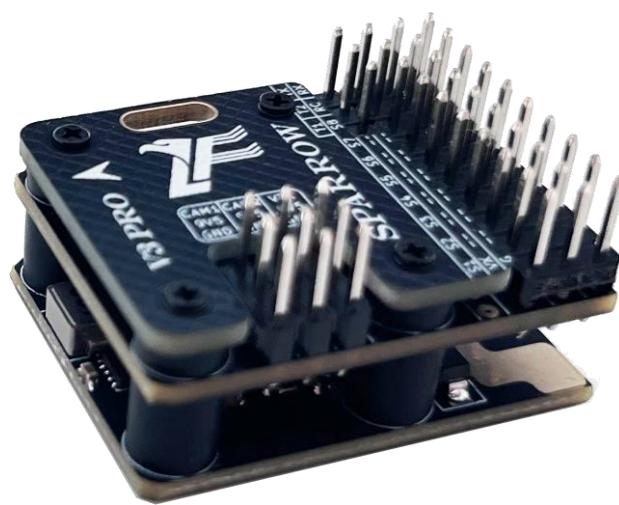


# **SPARROW V3 Pro**

Manual v2.0



## Disclaimers and Warnings

Please use this product within the scope permitted by local laws and regulations. LE FEI does not assume any legal liability resulting from any illegal use of this product.

This product is a remote-control aircraft model. Please strictly abide by the safety operating regulations of model aircraft products. LE FEI does not assume any performance, safety or legal liability caused by improper operation and use control.

Aircraft models are not toys. Please fly under the guidance of professional personnel and install and use them according to this product manual. LE FEI is not responsible for aircraft model accidents caused by improper installation, configuration, or operation by users.

Once you use this product, you are deemed to have understood, recognized and accepted the above terms and content. Please be responsible for your own behavior, safety and all consequences when using it.

## Content

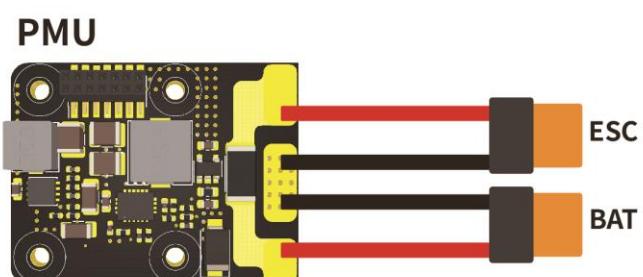
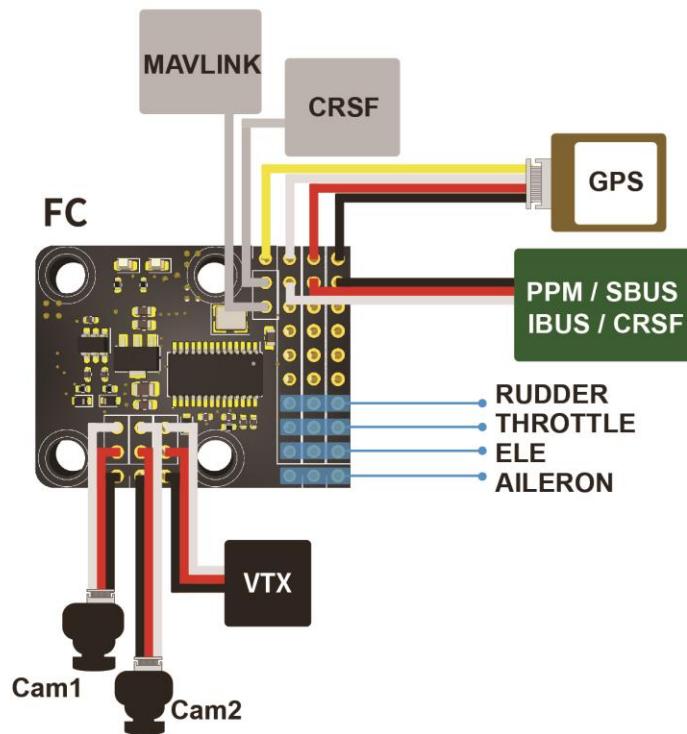
Parameter.....	3
Interface.....	3
OSD&LED.....	7
Flight Mode .....	11
Preflight inspection .....	12
FAQ .....	14
Accessories Description.....	17

## Parameter

- **FC**
  - SIZE: 33\*25\*13mm
  - WEIGHT: 16.5g
- **POWER**
  - INPUT: 2-6S (MAX 100A)
  - OUTPUT(PMU): 5V/4A 9.5V/2A
  - FC: 5V(PMU)
  - VTX/CAM: 9.5V(PMU)
  - SERVO: onboard 5V(PMU) or external BEC
- **RC RECEIVER**
  - Protocol: PPM SBUS IBUS ELRS/CRSF
  - Telem: MAVLINK、CRSF

## Interface

- **PORT**



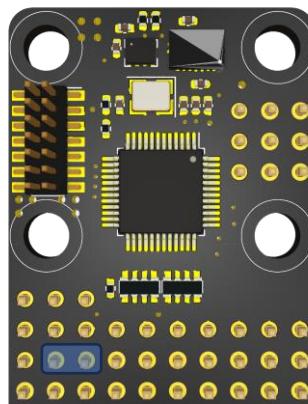
RC	Connect to the receiver's PPM channel or TX pin of the SBUS/IBUS/ELRS
T1	Connect the RX pin of the receiver MAVLINK
T2	CRSF
TX	GPS-RX
RX	GPS-TX
S1	AIL
S2	ELE
S3	THR
S4-S8	AUX Channel(S4 defaults to RUD)
CAM1-2	Dual camera
VTX	VTX
9V5	VTX/CAM power supply
BAT	Battery
ESC	ESC
VX	Servo power
G/GND	GND

\*It is recommended to remove the propeller during installation and debugging to avoid accidents!

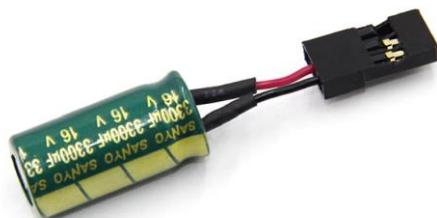
#### ➤ Servo power

**FC 5V BEC(PMU):** Use solder to connect the two pins shown in the picture, and disconnect other BEC of the servo (such as the built-in BEC of the ESC).

**External BEC:** If you do not connect the two pins shown in the figure, the external BEC is used by default. The BEC can be connected to any channel among S1-S8.

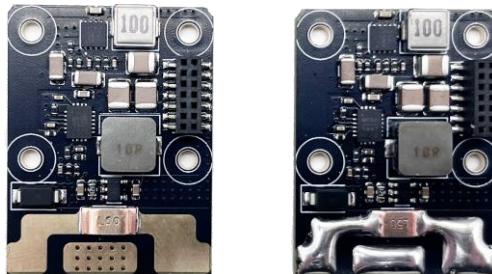


It's recommended to use the supplied 3300uF/16V capacitor to get a more stable and secure working voltage for the PMU. The capacitor can be plugged onto any one of the free input or output sockets of the FC.



### ➤ Large current

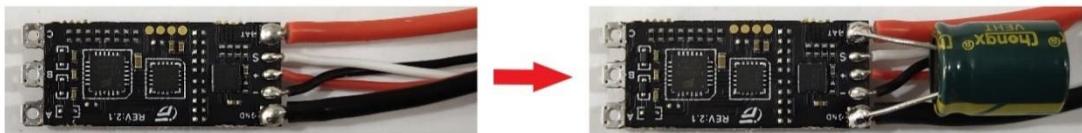
When the current is large, it is recommended to tin the exposed pad during soldering. When tinning, the solder can only be connected to both ends of the sampling resistor to avoid soldering together, as shown in the picture below! When using high current for a long time, the heat dissipation problem must be fully considered to avoid overheating and damage to the equipment!



When the current is too large and the battery power supply capacity is insufficient, it may cause the OSD to flicker. At this time, it is recommended to connect a low ESR large capacitor in parallel with the FC, such as 470uf/30V([included in the accessories](#)); Pay attention to the positive and negative poles of the capacitor when using it. The common way to judge is that the longer pin is the positive pole and the shorter pin is the negative pole, or you can judge by the positive pole (+) or negative pole (-) marked on the capacitor shell,



In some ESCs, the battery voltage and 5V-BEC output voltage fluctuate greatly under high current conditions, which will cause certain interference to the FC, such as OSD flickering or even the sensor being affected, resulting in an attitude error. A low ESR large capacitor is connected in parallel with the output terminal of the ESC (the closer the ESC is, the better the effect). If space allows, a capacitor can be connected in parallel at the BAT and ESC terminals of the FC.



### ➤ Remote control and receiver

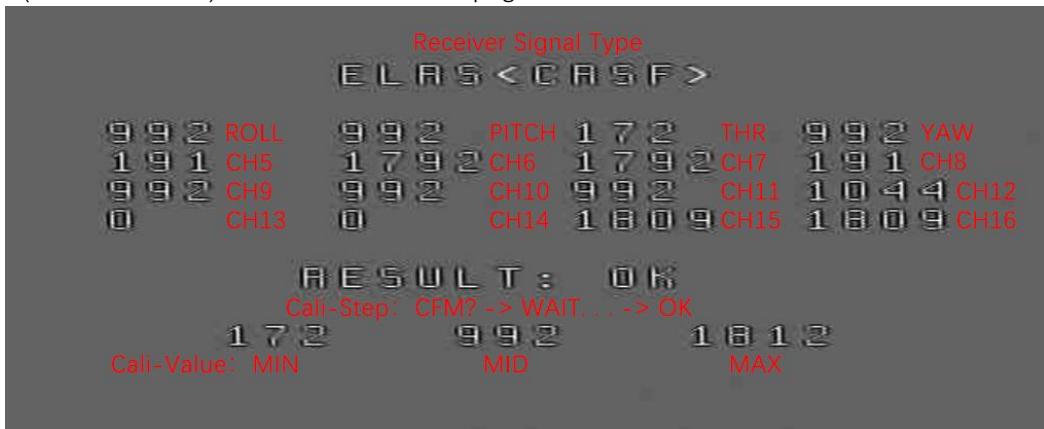
#### ● PPM SBUS IBUS ELRS/CRSF

Just connect the signal to the RC channel, the FC will automatically recognize it; the default channel sequence is A-E-T-R; it supports dual-channel mode switching and is divided into **MAIN-SUB** mode channels. You can set 5 flight modes at the same time. The main mode channel defaults to CH5, before using the sub mode, you only need to set one of the main modes to [<SUB>](#).

#### ● Calibrate the RC

Enter the OSD menu [<RC>-<RC CALI>](#), press and hold the joystick for a few seconds (ROLL to the right) until [<CFM?>](#) appears. Quickly dial the main mode channel several times to complete the calibration. If [<ERR>](#) or [<BAIS>](#) are displayed after calibration, it indicates that the calibration failed. Observe whether there are biases in the channel data displayed on the OSD. If the calibration fails and the RC cannot be calibrated again, you can turn the roll and pitch joystick to the MAX, and then restart the FC, it will automatically enter

**<RC CALI>** After the calibration is completed, press and hold the joystick for a few seconds (ROLL to the left) to exit the calibration page.



- \*For different RC and different types of receiver signal, the channel data displayed on the above screen is different, so the RC calibration needs to be performed;
- \*If you use this FC for the first time or after changing to another RC, it is recommended to perform RC calibration;
- \*Before confirming the calibration, carefully observe whether the channel data is normal, whether the stick is biased and whether the throttle is at the lowest position?(throttle at the lowest position, the other joysticks at neutral positions)

#### ● RSSI

RSSI channel can be selected, and the range of RSSI value is the same as that of other channels. When using ELRS, if the RC cannot set an independent RSSI channel, you can set **<RSSI>** in the OSD menu to **<AUTO>**, which will display LQI (Link Quality Indication).

#### ● CRSF Telemetry

When the signal type is ELRS, CRSF telemetry is automatically turned on, and the user only needs to connect the RX of the receiver to the T2 port of the FC; the telemetry information includes flight mode, latitude and longitude, attitude angle, speed, altitude, heading, number of satellites and other information.



#### ● Tips

When using the RC, there is no need to set the mixing mode, the user can select the appropriate model in the OSD setting menu; when entering the OSD setting menu, do not limit the travel of the sticks.

#### ➤ InstallDirection

0D	Arrow points to the head
90D	Arrow points to the right
180D	Arrow points to the rear
270D	Arrow points to the left
R90D	Arrow points to the head, place the bottom of FC on the right side of the plane

L90D	Arrow points to the head, place the bottom of FC on the left side of the plane
BACK	Arrow points to the head, and the bottom of FC points up

### ➤ SERVOS CONNECTION

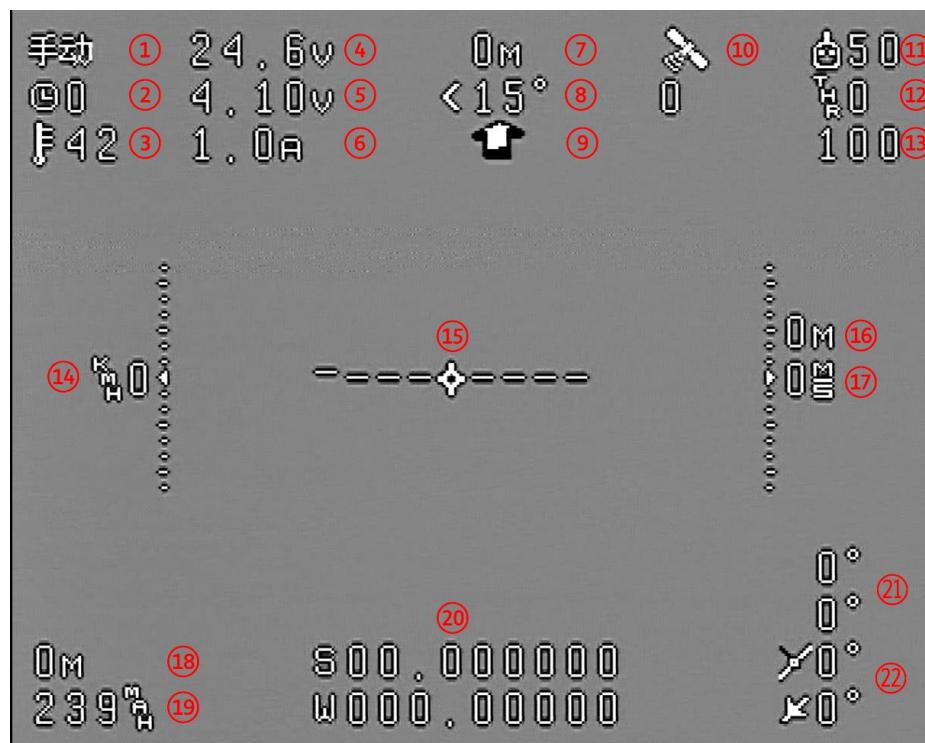
	T-TAIL	V-TAIL	WING
S1	AIL1/AIL2	AIL1/AIL2	AIL1
S2	ELE	RUD1	AIL2
S3	ESC	ESC	ESC
S4	RUD	RUD2	NO CONNECTION

\*S4 defaults to YAW(RUD) function, and can also be reused for other functions.

\*When using dual motors, just select any channel from S4-S8 to reuse it as the THR function, and then connect the two ESC wires to S3 and the selected channel respectively. If you need to use the throttle differential function, refer to [Throttle differential](#).

## OSD&LED

### ➤ MAIN



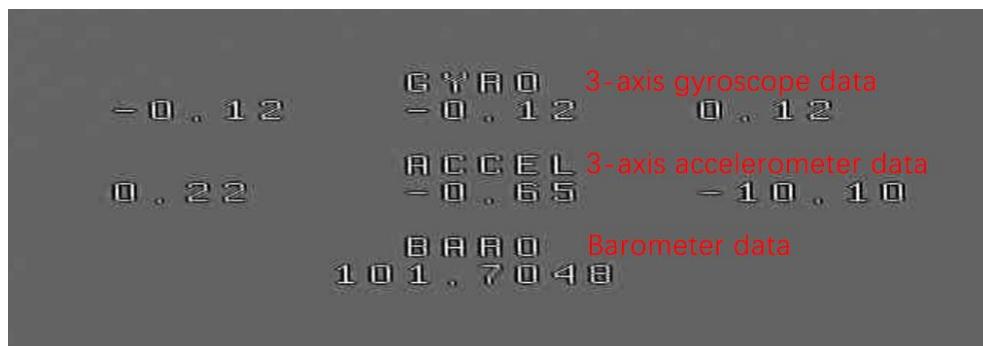
1	Flight Mode	12	Throttle
2	Time	13	Acceleration health
3	Temperature	14	GroundSpeed
4	Voltage	15	Horizon Line
5	Cell Voltage	16	Altitude
6	Current	17	Climb Rate
7	Distance	18	Voyage
8	Return Home Angle	19	Power Consumption
9	Flight Direction	20	Latitude and Longitude
10	Satellite	21	Desired Attitude Angle
11	RSSI	22	Actual Attitude Angle

\*The GPS icon will continue to flash when GPS is not connected or GPS is not fixed.

\*'>' means to turn right, '<' means to turn left, and the number after it indicates the specific required turning angle.

\*If the RC icon flashes, it means that the RC is failsafe or the receiver is disconnected. If the GPS has been fixed at this time, it will automatically switch to the RTH.

## ➤ FLIGHT LOG&SENSOR



## ➤ CONTROL OSD MENU

Enter Menu	Quickly dial <b>main</b> mode channel
Exit	AIL LEFT
Enter	AIL RIGHT
UP/DOWN	ELE UP/DOWN

\*When enter or exit the <RC CALI>, ROLL left or right needs to be held for a few seconds.

## ➤ PARAMETERS

RC	RC CALI	<i>Calibrate the RC</i>
	CHANNEL TYPE	A-E-T-R
	RSSI	<i>RSSI</i>
	MAIN CHANNEL	CH5/CH6
	SUB CHANNEL	CH5/CH6/CH7/CH8/CH9/CH10
	MAIN MODE1	STAB/MAN/ACRO/ALT/RTH/FENCE/HOVER/ALT*/SUB
	MAIN MODE2	
	MAIN MODE3	
	SUB MODE1	STAB/MAN/ACRO/ALT/RTH/FENCE/HOVER/ALT*
	SUB MODE2	
	SUB MODE3	
	TIMEOUT RTH	Enable RTH after timeout (except RTH and MAN)
	TIMEOUT SEC	Set the timeout (the time sticks remain motionless)
	CAM CHANNEL	Dual camera switching channel
BASE	FRAME	T-TAIL、V-TAIL、WING

	INSTALLATION	<u>InstallDirection</u>
	ROLL GAIN	
	PITCH GAIN	Set the gain, the YAW gain only works in ACRO .
	YAW GAIN	
	LEVEL CALI	<u>LEVEL CALI</u>
	VOLTAGE CALI	
	CURRENT CALI	Set voltage/current bias
	CRUISE SPEED	Flight speed in RTH/HOVER/ALT*
	RTH ALT	If the distance is beyond 3 times the circling radius, the min flying altitude is <SAFE ALT>. If it is higher than this altitude, it will slowly descend; after approaching the HOME, the fly altitude is <RTH ALT>
	SAFE ALT	
	FENCE RADIUS	If the distance exceeds this radius, RTH will be triggered
	RTH RADIUS	Circle radius
	BASE THR	MIN THR in RTH/HOVER/ALT*
	ACRO GAIN	Stability gain in ACRO
	VEL GAIN	The faster the speed, the smaller the required gain, and the larger <VEL GAIN> should be.
	THR-DIFF	Throttle differential ratio controlled by YAW.
	MANUAL	Sticks control ratio in ACRO mode.
	MAX ROLL	
	MAX PITCH	MAX flight angle
	BAT-S-NUM	Number of battery cells
SERVO	S1 DIR	Servo direction
	S2 DIR	
	S4 DIR	
	S5 DIR	
	S6 DIR	
	S7 DIR	
	S8 DIR	
	S4 FUNC	Set S4-S8 multiplex function, if set to throttle, it will have differential function
	S5 FUNC	
	S6 FUNC	
	S7 FUNC	
	S8 FUNC	
	S1 MID	Set the servo neutral position
	S2 MID	
	S4 MID	
	S5 MID	
	S6 MID	
	S7 MID	
	S8 MID	
OSD	MODE	When the OSD item is set to <ON>, quickly dial the main mode channel to enter the OSD position adjustment page, and adjust the OSD position through the roll and pitch sticks. After the adjustment is completed, quickly dial the main mode channel can
	TIME	
	VOLTAGE	
	CURRENT	
	DISTANCE	

	RTH ANGLE	exit.(Each channel of the dual-channel camera can be individually set to the position and whether to display. When setting, you only need to use the <u>&lt;CAM CHANNEL&gt;</u> to switch to the corresponding camera screen)
	SATELLITE	
	RSSI	
	THR	
	ALT	
	CLIMB RATE	
	GROUNDSPED	
	VOYAGE	
	MAH	
	LLA	
	ATTITUDE	
	HORIZON	
	FLY DIR	
	ALT SCALE	
	SPEED SCALE	
	SINGLE CELL	
	TEMPERATURE	
	ACCEL HEALTH	
	DESIRED-ATT	
	DESIRED-ALT	
	OSD	Enable OSD overall display
	HOS	Set OSD bias
	VOS	
SYSTEM	TELEMETRY	MAVLINK baud
	GPS RESET	<b>GPS RESET</b>
	GPS CFG	Whether to configure GPS after powering on. Not configuring can reduce the initialization time
	FC RESET	Restore default settings
	FLY SUMMARY	Flight data summary
	SUMMARY RESET	Reset flight data summary
	FC DATA	Sensor data display
	LANGUAGE	Chinese or English.

\*When setting the servo function, RC6-12 means the RC 6-12th channel.

\*< FENCE RADIUS> only works in fence mode, other modes do not have fence function.

\*After changing the <TELEMETRY>, you need to restart the FC.

#### ➤ Flight Summarize

After landing, OSD will show summarize about flight information.

Quickly dial the main mode channel to exit.

#### ➤ LED

GREEN	Quick flash	RTH/ALTHOLD/FENCE/HOVER/ALT*
	Flash	MANUL/ACRO
	On	STAB
RED	Flash	GPS NoFix
	On	GPS Fixed
	Off	NO GPS

## ➤ GPS

The FC supports UBLOX protocol, but does not support NMEA. After power-on, the FC will automatically configure the GPS. If the FC cannot recognize the GPS latitude and longitude, you can reset the GPS through the setting item **<GPS RESET>**.

## Flight Mode

### ➤ How

<b>MAN</b>	The airplane is direct controled by RC.
<b>STAB</b>	Control the angle of airplane, and auto level when no RC input.
<b>ACRO</b>	Gyro mode, lock the current angle when no RC input.
<b>ALT</b>	Hold altitude when no ELE input, Minimum 25m.
<b>FENCE</b>	Auto Retun Home when out of fence radius.
<b>RTH</b>	Auto Retun Home.
<b>HOVER</b>	Hover over the current position.
<b>ALT*</b>	Lock the flight direction and maintain the altitude.

\* **FENCE/RTH/HOVER/ALT\*** can only be used when the GPS is fixed, otherwise it will become ALT.

### ➤ SUB Mode Setting

The flight controller supports main-sub mode channel setting, and up to 5 flight modes can be set at the same time. The setting method is as follows:

- Step 1: Select the appropriate main-sub mode channel. It is recommended to use a 3-pos switch;
- Step 2: Select any position in **<MAIN MODE 1/2/3>** and set it to **<SUB>**;
- Step 3: Set **<SUB MODE 1/2/3>** to the mode you need;
- Step 4: Switch the main-sub mode channel to observe whether the mode change is correct.

### ➤ Assisted Takeoff

**ALT/FENCE/ALT\*:** Push the throttle to enough power, after takeoff(throw it away), the aircraft will climb to 20m automatically.

**RTH Mode:** Push the throttle to enough power, shake the aircraft or run, then the motor starts slowly, and then take off after the power is enough(throw it away), the aircraft automatically climbs and circles over HOME.

### ➤ Throttle control

**MAN/STAB/ACRO/ALT:** Throttle is direct controlled by RC.

**FENCE:** Before triggering RTH, the throttle is controlled by RC, after triggering, it is determined by RTH.

**RTH/HOVER:** Throttle is controlled by RC during assisted takeoff, after entering the circling state, the throttle is controlled by the FC, it automatically adjusts the throttle according to the cruise speed you set, you can manually push the throttle up (beyond the throttle calculated by the FC) to increase cruise speed, but you can't pull it down.

**ALT\*:** Throttle is controlled by RC during assisted takeoff. After the automatic climb to 20m, the throttle is automatically controlled according to the cruise speed. When the throttle stick is at the neutral position, the flight is maintained at the cruise speed. Push the throttle up to increase the cruise speed, and pull down the throttle to decrease the cruise speed; When the

roll or pitch stick is in motion, the throttle is manually controlled.

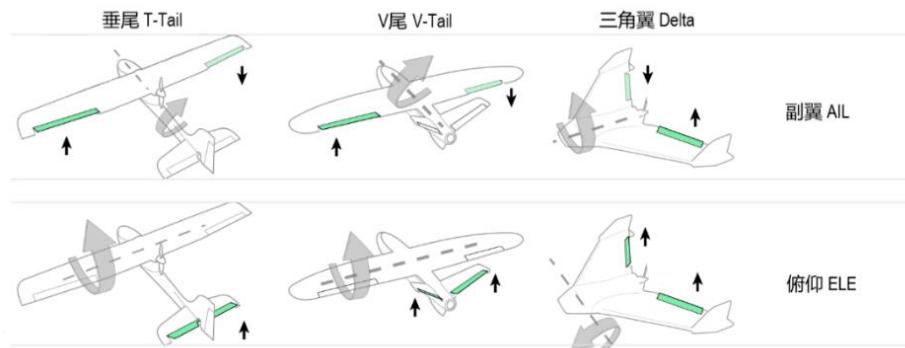
#### ➤ Throttle differential

Any port in S4-S8 is set to throttle, and the <THR-DIFF> is not zero, then you can control the differential rotation of the two motors by YAW channel. It is necessary to pay attention to whether the direction of the speed change of the two motors is correct, if it is not correct, just swap the two ESC signal wires.

### Preflight inspection

#### ➤ Feedback direction

感度方向测试 Feedback direction



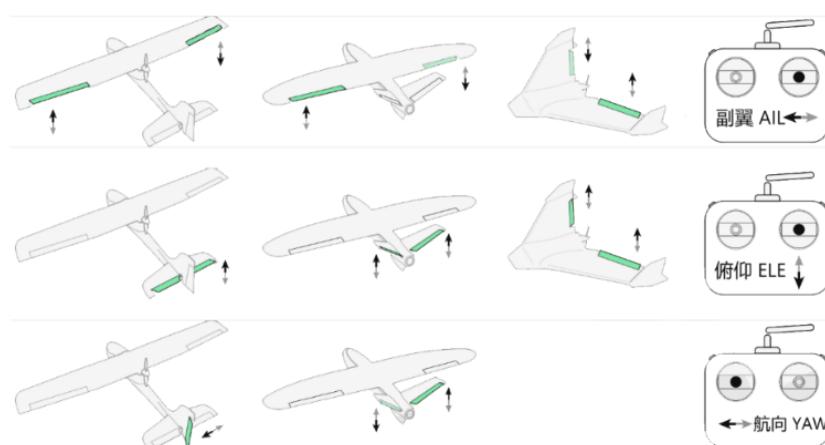
默认不支持航向通道自稳. NO Stabilization in YAW channel.

\* If the feedback direction is not correct, you can invert the channel in OSD.

\* The feedback direction must be set first, then the RC control direction.

#### ➤ RC control direction

通道方向测试 Control direction



\*If the control direction is not correct, you can set the channel output reverse in the RC.

\*After setting the feedback direction, the control direction can only be modified in the RC.

#### ➤ FailSafe

When the RC that outputs PPM/IBUS/CRSF is failsafe, there are usually three states that can be set. They are: cut (no output), pos hold (hold the output at the last moment before failsafe), custom (the user sets the output when failsafe), of course, different RC will be different.

**Cut mode:** the FC can automatic recognition as failsafe, and switch to RTH;

**Pos hold:** this mode is not recommended.

**Custom mode:** the user sets the output data of each channel when the RC is failsafe, to ensure that the output of the mode channel(CH5/CH6) can make the FC switch to RTH when the RC is failsafe. Therefore, RTH must be included in the three modes set in the OSD.

**PPM/IBUS/CRSF:** it is recommended to use cut mode or custom mode.

**SBUS:** the FC can automatic recognition as failsafe, and switch to RTH.

\* If you use custom mode, in order to simplify the operation, set the mode channel in the RC to output an arbitrary value, and then observe which mode the FC switches to after failsafe and then change the mode to RTH in the OSD. For example, after the RC is failsafe, the flight mode is automatically switched to A, then just set the position of A to RTH in the OSD.

## ➤ FC Installation

① After the FC installation is completed, you need to set the correct installation direction in the OSD menu. For the selection of the installation direction, refer to [<InstallDirection>](#);

② When installing, try to ensure that the direction is accurate. For example, when pointing to the head of the plane, try to ensure that the FC is parallel to the direction of the head of the plane, and there is no obvious included angle, otherwise the flight attitude will be affected;

③ When installing the FC, try to place it at the center of gravity and avoid placing it too close to the motor to avoid vibration that affects the flight attitude.

## ➤ LEVEL CALI

**Calibration method:** Place the FC horizontally and still, then start calibration, and wait for the calibration to be completed; when placing the FC in the cabin for calibration, ensure that the FC is placed horizontally in the cabin, and at the same time place the aircraft horizontally and still, and then start calibration.

**When calibration is needed:** It is recommended to perform level calibration when using the FC for the first time; after changing the installation direction, it is necessary to perform level calibration again; it is recommended to perform level calibration after it has not been used for a long time.

**Calibration precautions:** Try to keep it horizontal when calibrating, allowing a very small angle difference, which will not affect calibration and flight; you must remain still during calibration and do not shake the FC.

## ➤ Armed

**NO GPS:** after the FC is initialized, it will be automatically armed, and the motor can be started in all modes at this time.

**With GPS:** after GPS fixed, except for RTH and HOVER, the motor can be started at will, but before fixed, only **MAN** can start the motor.

## ➤ Calibrate ESC

Step1: Switch to **MAN** mode, push throttle channel to the max;

Step2: Power on, OSD prompt <THR> (longer waiting time than directly connected receiver).

Step3: After ESC Beep, push throttle channel to zero.

\*If it is a dual motor, you can calibrate the two ESCs separately!

## FAQ

Q. Important question!!!

A. Failsafe is very important and must be set! It is recommended to record DVR when using for the first time!

**Q. Questions about calibrating RC.**

A. Before calibrating the RC, the first thing to do is to determine whether the channel data displayed on the screen is normal. Whether the channel data is normal mainly focuses on the four joystick channels, namely ROLL、PITCH、THR、YAW. When the throttle is at the lowest position and the other joysticks are no bias, the neutral position values of ROLL、PITCH、YAW should be very close or the same. If there are biases in some channels, it may cause the calibration result to display an <ERR> or <BIAS> prompt, at this point you need to recalibrate the RC, and before calibration, the throttle must be at the lowest position, the other joysticks must be in the neutral positions, and the channels must have no biases. Refer to [<Calibrate the RC>](#).

Q. How to operate after reconnecting from Failsafe?

A. When FC recognizes Failsafe and the GPS connection is normal, it automatically switches RTH; When the RC is reconnected, FC will be controlled again by the RC, and the user can take over in a timely manner!

Q. Can I set the aircraft model on the RC?

A. The aircraft model must be set through FC and the aircraft model setting option in the RC is set to T-Tail.

Q. Is it normal for the rudder surface to react when pushing throttle during testing?

A. This is a normal integration phenomenon, it does not affect the flight.

Q. The rudder surface response is too small in STAB or other modes.

A. Under normal flight conditions, you can increase the gain appropriately and the control surface response will increase.

Q. The RC cannot control servos in RTH and HOVER.

A. This is a normal phenomenon. In RTH and HOVER, the servo is automatically controlled by the flight controller!

Q. Is there any throttle output in RTH and HOVER during flight?

A. It is recommended to fly normally for more than 6 seconds before switching to RTH or HOVER. At this time, the throttle is automatically controlled by the flight controller. If you switch to return mode just after takeoff in other modes, it is recommended to manually push the throttle to a point with sufficient power.

Q. Throttle problem in RTH and HOVER.

A. If assisted takeoff is not performed, there will be no response when pushing the throttle; during assisted takeoff, after the aircraft is shaken or the run-up conditions are met, the throttle begins to slowly increase to the pos of the throttle stick (therefore, the throttle needs to be pushed to sufficient power at the beginning ), after starting to hover, the throttle will be automatically controlled based on the cruising speed. At this time, the user can push the

throttle up, but cannot pull it down. That is, the flight controller calculates the throttle value that meets the current cruising speed, and then compares it with the current actual throttle stick. The actual output value is the larger of the two.

Q. About cruise speed setting.

A. Do not set the cruise speed too low, as it may cause stalling. It is recommended to refer to the cruise speed given by the manufacturer before setting it. If you feel that the cruise speed is set too low and the flight is dangerous, you can manually push the throttle up!

Q. Does the flight controller support devices such as FM30 and HM30?

A. Support. The flight controller can output the MAVLINK with two baud rates of 57600 and 115200. The user can connect the T1 port of the flight controller to the RX of the data transmission device, and then select the appropriate baud rate in the [TELEMETRY](#).

Q. Why does the motor keep beeping?

A. [Throttle control](#) & [Armed](#)

Q. RTH or FENCE or HOVER or ALT\* mode becomes ALT.

A. RTH /FENCE /HOVER/ALT\* can only be used when the GPS is fixed, otherwise it will become the ALT.

Q. RSSI is incorrect.

A. Check which channel the RSSI is set in the RC, and then modify the [RSSI](#) in the flight controller to the corresponding channel; RSSI with independent wiring is not supported; When using ELRS, if the RC cannot set an independent RSSI channel, you can set [RSSI](#) in the OSD menu to [AUTO](#), which will display LQI (Link Quality Indication).

Q. Why can't the SBUS automatically recognize the failsafe?

A. Because some receivers are not standard SBUS, the flight controller may not be able to automatically identify the failsafe. In this case, the user needs to manually set failsafe. Please refer to [FailSafe](#).

Q. ALT\* cannot maintain the direction.

A. Check whether the ROLL and PITCH sticks are centered.

Q. The throttle suddenly changes when operating the sticks in the ALT\*.

A. When the roll or pitch stick is in motion, the throttle is manually controlled; after the stick is returned to the center, the throttle output is automatically controlled by the flight controller according to the cruising speed. Therefore, if there is a large difference between the manual throttle and the actual throttle calculated by the flight controller when the stick is in motion, it will cause a sudden change in the throttle.

Q. About the dual-channel camera.

A. When using only one camera, the CAM1 channel is enabled by default. If the camera is connected to CAM2, there will be no image output, but there will be OSD. When using dual cameras, you only need to set the [CAM CHANNEL](#), you can switch the screen through the corresponding channel; When using dual cameras, it is recommended that both cameras be in PAL or NTSC format. This can avoid image or OSD flickering when switching. It is also recommended to use PAL format cameras. The OSD fonts are moderate and the display effect is good.

Q.What type of GPS can be used for flight controller?

A. The SPARROW V3 Pro support protocol is UBLOX and does not support the NMEA protocol. Therefore, please pay attention when choosing. The series that support UBLOX include the 6th, 7th, 8th, 9th and 10th generations.

Q. Regarding the current sensor problem.

A. The maximum current that the FC can effectively measure is 100A, and the maximum current that the FC can withstand is 120A. After exceeding 100A, the current display value is no longer accurate. At the same time, in order to ensure the safety of the FC, it is not recommended for users to use it beyond the range; When using a large current within the measuring range for a long time (for example, more than 50A for a long time), the temperature rise caused by different current and heat dissipation environments must also be considered. Excessive temperature rise may cause the solder to melt and affect flight safety. If you need to fly with a large current for a long time, it is recommended to test on the ground first.

Q.Why do some characters flicker after adjusting the OSD position?

A. The font flickering may be caused by unreasonable position adjustment. You can move the character in the other direction to display it normally. For example, the mode "MAN" has three characters, and "ALT\*" has four characters. The FC will reserve four positions for display. When adjusting the OSD position, if only one position is reserved after "MAN", it will cause other display fonts after "MAN" to flicker.

Q.Why is the flight summary not automatically displayed after landing?

A. After landing, you need to pull the throttle to the lowest position and ensure that the throttle value displayed in the upper right corner is 0. If the throttle value displayed is not 0, you need to recalibrate the remote control.

## Accessories Description



**Camera wire x 2:** Compatible with CADDX and other camera wire sequences. Be sure to check whether the wire sequence needs to be modified before use.

**VTX wire x 1:** Compatible with PandaRC and other VTX wire sequences. Be sure to check whether the wire sequence needs to be modified before use.