BETAFPV

Pavo20 Pocket

FPV Drone

User Manual

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2. Pre-flight Checks

1. Verify that all components are included, without damage and the quadcopter's frame has no deformation.

2. Verify that propellers and motors are installed correctly and stably.

3. Ensure that propellers do not scratch against frame ducts and motors spin smoothly.

4. Verify batteries (of quadcopter, remote control radio transmitter, and FPV goggles) are fully charged.

5. Ensure the pilot is familiar with all flight controls and transmitter functions in order to maintain safety.

6. Always keep a safe distance in all directions around the quadcopter (1 meter or more) when having a test-flight. Operate the quadcopter carefully in open space.

7. Please click the below link and watch the instruction video, you can learn how to bind the remote control radio transmitter to the quadcopter.

https://www.youtube.com/watch?v=sVDAzZalURg

3. LED Light

There are two RGB status LEDs on the bottom of the quadcopter.

Status LED ——————————— | Status LED
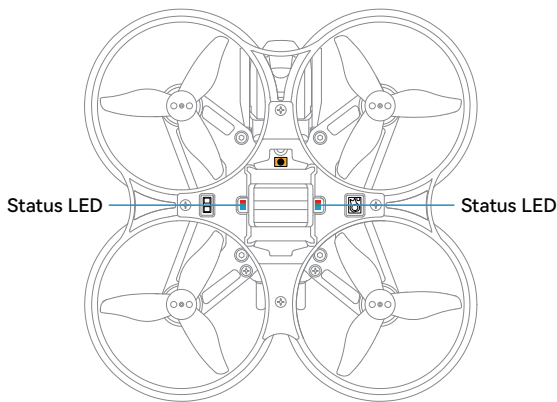
Status LED color	Status	State description	Solution
——	Off	The power on the quadcopter is abnormal or off	Replace the battery and power on again
Red	Flashing slowly	Quadcopter battery voltage is low	Replace the battery
Blue	Solid	The quadcopter is connected with the remote control radio transmitter	
Blue	Flashing fast	Quadcopter is horizontal calibrating	Place the quadcopter on a horizontal surface and wait for a while
Purple	Solid	Quadcopter accessed the OSD menu	
Green	Flashing slowly	Quadcopter is in binding mode	
White	Flashing fast	Arming failed, because the throttle joystick was not at the lowest position when arming	Place the throttle joystick at the lowest position and arming successfully
Brown	Flashing slowly	Loss of remote control radio transmitter signal	Re-establish the connection with the remote control radio transmitter

4. Flight Modes

The flight mode is displayed in the lower right corner of the flight screen, corresponding to the flight mode of quadcopter. Pilot can choose different flight modes according to different flight environments and their flight control skills.

1. Normal Mode: When the quadcopter ascends, center the two joysticks at the same time, and the quadcopter will maintain at a fixed point in a horizontal attitude. The position of the direction joystick controls the tilt direction and tilt angle of the quadcopter. The quadcopter has an auxiliary flight function that can assist in adjusting the altitude and horizontal position, which makes it easier for pilot to control. N MODE is displayed in the OSD.

2. Sport Mode: When the quadcopter ascends, pilot needs to operate the throttle joystick to control and adjust the altitude of the quadcopter. The position of the direction joystick controls the tilt direction and tilt angle of the quadcopter. When the direction joystick is moved back to the center, the quadcopter will return to a horizontal attitude. The quadcopter has no auxiliary flight function, which makes the operation relatively difficult for pilot. S MODE is displayed in the OSD.

3. Manual Mode: When the quadcopter ascends, pilot needs to operate the throttle joystick to control and adjust the flight altitude. Position of the direction joystick controls the roll direction and the roll speed of the quadcopter. The quadcopter will maintain its current attitude when the direction joystick is moved to the center. The quadcopter has no auxiliary flight function, and the flight attitude and altitude are completely dependent on the pilot to control the quadcopter by the remote control radio transmitter, which makes the operation very difficult for pilot. M MODE is displayed in the OSD.

4. Turtle Mode: If the quadcopter crashes into the ground and the fuselage is flip, the turtle mode can be activated to reverse the motor and turn the quadcopter back to the front. When in use, the direction joystick is used to control the rotation of the motor to drive the blades to rotate in the reverse direction, thereby realizing the reverse rotation of the fuselage. TURTLE is displayed in the center of the OSD. For more details, please refer to the chapter "Turtle Mode".

Note: Please keep the flight altitude within 0.3-3m when it is in the Normal Mode. This can keep the quadcopter fly stably. The outdoor flying height of the quadcopter should not exceed 3m as far as possible.
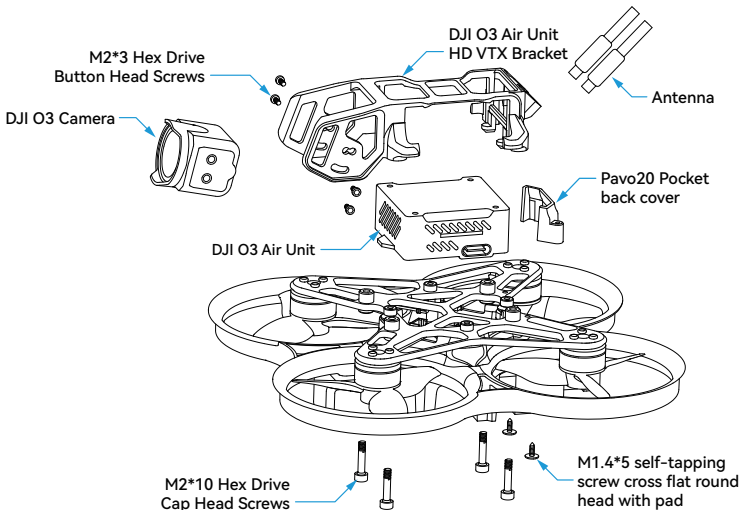
5. DJI O3 Air Unit

It is an integrated HD VTX device equipped with DJI Goggles (supports DJI Goggles 2 and DJI FPV Goggles V2).

Please refer to the following link with details instruction manuel:
https://www.dji.com/cn/o3-air-unit/downloads
DJI O3 Air Unit Assembly instructions:

M2*3 Hex Drive Button Head Screws

DJI O3 Camera

DJI O3 Air Unit HD VTX Bracket

Antenna

Pavo20 Pocket back cover

DJI O3 Air Unit

M2*10 Hex Drive Cap Head Screws

M1.4*5 self-tapping screw cross flat round head with pad

6. Binding the Quadcopter and Transmitter

The Pavo20 Pocket Quadcopter integrated ExpressLRS 2.4G receiver with the default ExpressLRS 3.0 protocol.

Ensure that your transmitter is on the same protocol as Pavo20 Pocket Quadcopter, which has all the channels preset beforehand (default channel map is AETR1234).

The following demonstrations are based on LiteRadio 2 SE transmitter (Mode 2 Left Stick Throttle) as an example to explain the binding process.
The binding steps are as follows:
● Ensure that the current protocol on the transmitter is ExpressLRS 2.4G 3.0 protocol;
● Power on and off the quadcopter for three times and each operation maintains 1 second. After that, the status light will turn green and flash slowly, which means it enters the binding mode.
● Power on the transmitter and wait for the initialization to complete.
● Gently press the BIND button on the back of the transmitter, and the red LED on the transmitter will flash rapidly.
● If the status light on the quad turns solid blue, then the binding is successful.

Note:
1. The Serial ELRS 2.4G receiver integrated in Pavo20 Pocket supports the default ExpressLRS 3.0 protocol. It is not compatible with ExpressLRS 1.X or ExpressLRS 2.X protocols for connection.
2. The Serial ELRS 2.4G receiver integrated in Pavo 20 Pocket can use the Passthrought function through the ExpressLRS . It is recommended to only flash ExpressLRS 3.X firmwares. Down-grading to ExpressLRS 2.X may have the risk of firmware failure;
3. After one successful binding, restarting the quadcopter or transmitter will be automatically binding successfully. Re-bind is not needed.
4. The re-binding of the remote control radio transmitter and the quadcopter may not be successful after pressing the BIND button of the remote control radio transmitter once. In this situation, pilot needs to repress the BIND button to complete binding.
5. Kindly click the link provided in point 7 of "Preflight Checks" to learn how to bind the transmitter to the quad through the instructional video.

7. How to Access / Operate OSD Setting Menu

Below instruction applies to LiteRadio 2 SE Mode 2 Transmitter(Left Stick Throttle). The position of joysticks to access the OSD setting menu is shown below. The throttle joystick is moved to the left center and the direction joystick is towards the upward center.

Note: Make sure the quadcopter is disarmed before accessing the OSD menu.
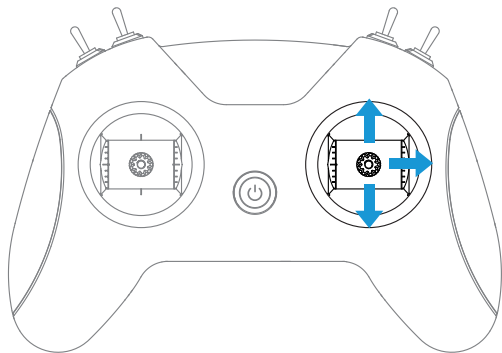
← Throttle Stick Left   ↑ Direction Stick Up
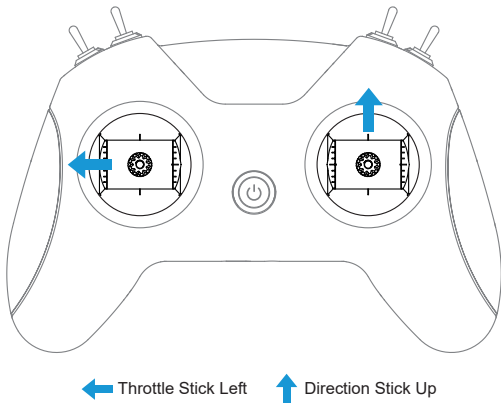
After accessing the OSD menu, pilot will see the following menu interface on the FPV screen.

```
            – MAIN –

         >CONFIG          >
          OPTION          >

          SAVE
          EXIT
```
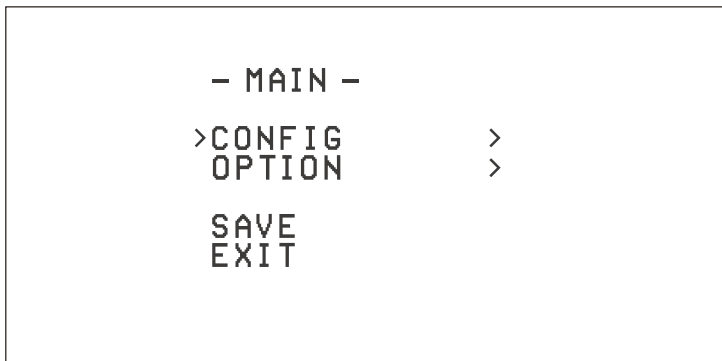
The OSD menu cursor can be controlled by the direction joystick to operate the OSD interface:
● Up: move the cursor up
● Down: move the cursor down
● Right: confirm/modify selection

Joystick up:
Cursor Move up

Joystick down:
Cursor Move down

Joystick right:
Modification/Confirmation

8. Quadcopter Level Calibration

After the quadcopter has taken off and landed several times, the data of quadcopter gyroscope might be inaccurate. This will cause the quadcopter to always tilt in the same direction during flight. To fix it, the quadcopter gyroscope can be recalibrated. The steps are as follows:

● Turn on the quadcopter and the remote control radio transmitter, and ensure that both devices are bound;

● Place the quadcopter on a horizontal plane;

● Enter the quadcopter's OSD menu (Refer to "OSD Menu Operation");

● In the MAIN menu, select CONFIG, then CALI;

● Push the direction joystick to the right to enter level calibration mode. Then the quadcopter's LED will flash blue;

● When the OK prompt appears and the LED returns to solid blue, the calibration is complete. Pilot can exit the OSD menu.

```
            — CONFIG —

            TOF              OFF
            OPF              ON
            LED              OFF
           >CALI             OK
            BACK
```

9. Charging Instructions

Pavo20 Pocket comes with BT3.0 550mAh 2S Lipo Battery

DISCLAIMER: ALL OF THE INSTRUCTIONS AND PRECAUTIONS MUST BE READ CAREFULLY AND FOLLOWED EXACTLY BEFORE USE.

DISCHARGING

● Never allow the temperature of batteries to exceed 140° F during discharge.

● Never discharge the battery to a level below 6V under load.

● Stop using it if the user finds the cells voltage are not balanced or cells are puffing bulging or weeping leaking or other abnormalities.

CHARGING

● Always check the voltage before each charge session.

● Always check the battery before charging for any type of damage.

● Only use charger designed for lithium polymer/Li-ion battery, and verify it is in good condition.

● Never overcharge the battery (4.35V per cell).

● Never leave the battery unattended during the charging process.

10. Battery Charging

Each battery provides 4.5 minutes of smooth flight. When LOW VOL is displayed on the OSD flight interface, which indicates that the battery is too low and needs to be charged. Fully Charging a battery will take approximately 25 minutes. Charging steps are shown below:

● Connect the adapter and battery charger with Type-C cable and plug the adapter into the power socket;

● To charge the battery, connect the charger and BT3.0 port;

● When the LED digital display shows the battery voltage, and the indicator stays solid red, this indicates the battery is charging; When the LED digital display is circling rectangular display and the indicator turns off, this indicates the battery is fully charged, charging process ends.
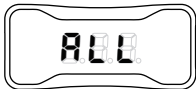

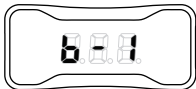Adapter   Type-C Port   BT3.0 Port   2S Battery

Voltage Display Function

Disconnect the power connection of the charger, then connect 2S battery to the charger, and the charger will display the total voltage of 2S battery and the voltage of two individual cells in turn.
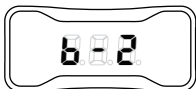
Total battery voltage:

ALL.	8.00

Cell 1 voltage:

b-1.	4.00

Cell 2 voltage:

b-2.	4.00

Indicator Status

The LED digital display and red light of the charger are used to indicate the working states of the charger.

| LED Digital Display	Indicator Status	Description
Circling rectangular display	Red light off	Not charging
Total voltage	Red light on	Charging
Rectangle symbol	Red light off	Charging completed
No display	Red light flash	Abnormal battery

Note: When the charger fails to charge or when the red light flashes, please check whether the battery is working normally or replace the battery for charging.

11. Turtle Mode

When the quadcopter falls to the ground and is facing down, we can activate turtle mode with the remote control radio transmitter to turn it over. To activate turtle mode:

The following example uses LiteRadio 2SE(Left Throttle) to demonstrate.
● Toggle switch SD from down to up to activate turtle mode. TURTLE is displayed in the OSD, as shown below;
● Move the direction joystick toward either direction. The motor will spin, and the quadcopter will reverse;
● Move switch SD down to turn off turtle mode;
● Arm the quadcopter and operate normally.
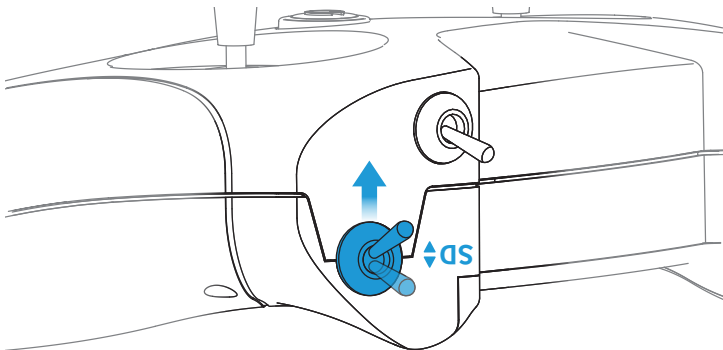
Quadcopter in Flip State: Toggle Switch SD
from Down to Up to Activate Turtle Mode

Note:
1. Turtle mode is suitable for flat ground and it's not recommended to activate this mode on grass or fabrics as the motor may be obstructed, resulting in damage of the motors and ESC.
2. When the battery power of the quad is too low, such as ≤7V, turtle mode may not work. In this case, it is necessary to manually turn the quadcopter over.

12. How to Fix Quadcopter Drift

In Normal Mode, the optical flow positioning function of quadcopter is turned on by default. When the drone starts to drift, here is a checklist you should look for to understand why your drone drift sideways and how to fix them.

Q1: The blades are blocked or damaged;
A1: Common solutions include cleaning hair and other foreign objects wrapped around the motor, or replacing damaged blades to avoid friction with the frame protection guard when the blades rotate;

Q2: The ambient light is too dark, or flying above water, causing the optical flow sensor of the hover positioning function to fail.
A2: Please fly in an environment with obvious ground features and sufficient light. Try to avoid adverse environments where it is difficult to identify ground features (such as

dark environments or above water), otherwise the quad may drift or have difficulty controlling.

If you need to fly in the above-mentioned adverse environments, please turn off the quad's optical flow positioning function. After the optical flow positioning function is turned off, the quad will lose flight assistance in the horizontal direction. A good flying skill is required from pilot in such scenario. You can enter the OSD setting interface to turn off/on the optical flow positioning function.

Q3: When the quad collides or crashed, strong vibration causes inaccuracy in the gyro sensor data, and it cannot be automatically repaired.

A3: Enter the OSD menu to manually calibrate the gyroscope.

Enter the OSD menu, CONFIG page, select CALI, and turn the joystick to the right to enter manual gyro calibration, the blue light on the quad flashes quickly; After the calibration is completed, the blue light stays on, and the word "OK" is displayed in the OSD menu (Please place the quad on a horizontal surface for calibration, do not move the quad during calibration);

```
      — CONFIG —

        TOF           OFF
        OPF           ON
        LED           OFF
      > CALI          OK
        BACK
```

Note: To set the OSD menu, please refer to the "How to Access/Operate OSD Setting Menu" chapter in the manual. For the detailed gyroscope calibration process, please refer to the "Quadcopter Level Calibration" chapter in the manual.

Q4: The ambient wind speed is greater than level 3, resulting in unstable hovering.
A4: In an environment with excessive wind speed, it is recommended to fly in S or M mode. Or turn off the optical flow positioning function and manually control the horizontal position of the flight. Kindly enter the OSD setting interface to turn off/on the optical flow positioning function.

Q5: Hovering is unstable due to dirty sensors.
A5: Please ensure that there is no covering object underneath the sensor and no dirt or dust on the sensor surface that affect its accuracy. When auxiliary flight function of N mode does not work normally, please kindly wipe the sensor clean before continuing to use it.

Sensor ──────── ──────── Sensor
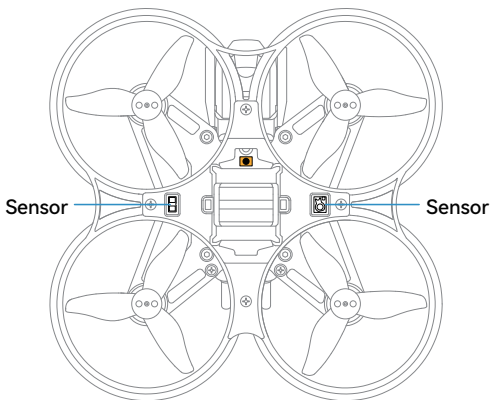
1. 产品清单

| Pavo20 Pocket整机 (带DJI O3 Air Unit)	Pavo20 Pocket整机 (不带DJI O3 Air Unit)
1 × Pavo20 Pocket整机 （带DJI O3 Air Unit） 2 × BT3.0 550mAh 2S锂电池 1 × 2S电显充电器|BT3.0 4 × 桨叶 1 × 4Pin转接线 1 × USB Type-C转接板 1 × DJI O3 Air Unit官方说明书 1 × DJI O3 Air Unit双频天线 1 × 使用说明书 1 × 手提收纳包	1 × Pavo20 Pocket整机（不带DJI O3 Air Unit） 2 × BT3.0 550mAh 2S锂电池 1 × 2S电显充电器|BT3.0 4 × 桨叶 1 × 专用螺丝包 1 × 4Pin转接线 1 × USB Type-C转接板 1 × DJI O3 Air Unit数传支架 1 × 使用说明书 1 × 手提收纳包

2. 飞行前注意事项

1. 取出所有设备，对照产品清单，确定配件齐全无损，确定飞机机架无变形。

2. 检查桨叶和电机是否安装正确和稳固。

3. 检查电机是否能够正常旋转，如果出现桨叶摩擦机架，或者异物缠绕等阻碍电机旋转情况，请先处理。

4. 确保遥控器电池、飞机电池以及FPV眼镜电池电量充足。

5. 请确保熟知每个摇杆的功能后再进行飞行。

6. 请选择空旷场地进行试飞，并且人与飞机保持一米以上距离，小心操作，注意安全。

7. 请扫描以下二维码，通过视频了解如何使用遥控器与飞机对频。

3. LED状态灯

飞机底部有两颗彩色的状态灯（RGB灯）。用于提示飞机是否正常上电和飞机的各种状态情况。

状态灯 ————   ———— 状态灯
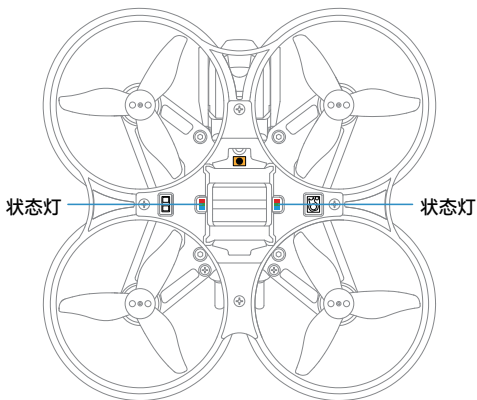
状态灯颜色	状态	状态说明	解决办法
——	熄灭	飞机上电不正常	更换电池重新上电
红色	慢闪	飞机电池低电压	需要更换电池
蓝色	常亮	飞机和遥控器连接成功	
蓝色	快闪	飞机水平校准中	飞机平放地面，等待片刻
紫色	常亮	飞机进入OSD菜单	
绿色	慢闪	飞机进入对频状态	
白色	快闪	解锁时遥控器油门杆未处于最低处	将油门杆置于最低处再解锁
琥珀色	慢闪	飞机丢失遥控信号	重新建立和遥控器的连接

4. 飞行模式介绍

飞行模式显示在飞行画面的右下角位置，对应飞机的飞行方式。操控者可以根据不同的飞行环境和自身操控飞行技巧，选择不同的飞行模式。

1. 普通模式：即定高定点模式，飞机启动上升之后，油门摇杆居中时，飞机会以水平姿态定点悬停，向上推动油门摇杆时，飞机垂直上升，向下推动油门摇杆时，飞机垂直下降，方向摇杆的位置对应飞机的倾斜方向和倾斜角度。难度较小。OSD中显示N MODE。

2. 运动模式：飞机启动上升后，飞行者需要操作油门摇杆来控制和调整飞机的高度。方向摇杆的位置对应飞机的倾斜方向和倾斜角度，摇杆回中后，飞机会恢复水平姿态。飞机无辅助飞行功能，难度较大。OSD中显示S MODE。

3. 手动模式：飞机启动上升后，飞行者需要操作油门摇杆来控制和调整飞机的高度。方向摇杆位置对应飞机的翻滚方向和速度，摇杆回中后，飞机会保持当前姿态。飞机无辅助飞行功能，完全依靠飞行者通过遥控器操控飞机飞行，难度大。OSD中显示M MODE。

4. 反乌龟模式：若飞机碰撞落地后机身是反面朝上的状态，可通过启用反乌龟模式，使电机反转，将飞机翻转回正面。使用时用方向摇杆控制马达转动带动桨叶反转，进而实现机身反转回正。OSD中在屏幕右下角显示TURTLE。详见"反乌龟模式"章节。

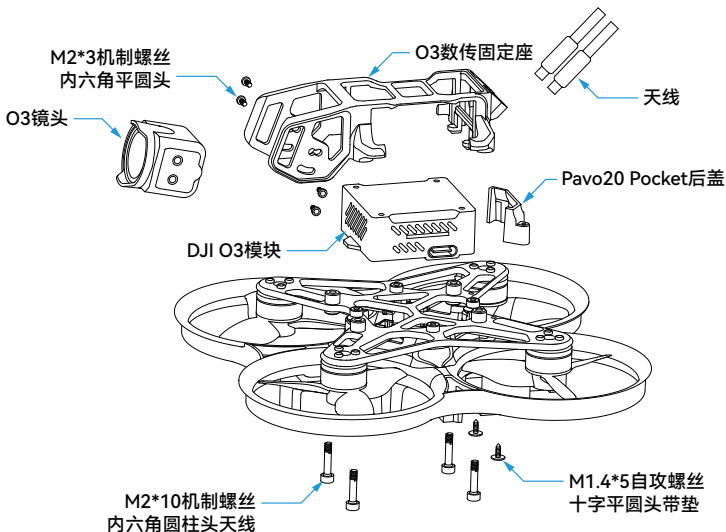注意：在使用普通模式飞行时，尽量选择无风环境，飞机距地面高度保持在0.3~3m范围，可以使飞机更平稳地飞行。飞机室外飞行高度尽量不要超过3m。

5. O3天空端说明

DJI O3 Air Unit 是一款一体化图传设备，搭配 DJI 飞行眼镜（支持 DJI Goggles 2 与 DJI FPV 飞行眼镜 V2）一起使用。

O3天空端详尽的使用说明请查询以下链接：

https://www.dji.com/cn/o3-air-unit/downloads

DJI O3 Air Unit装配说明：

- M2*3机制螺丝 内六角平圆头
- O3数传固定座
- 天线
- O3镜头
- Pavo20 Pocket后盖
- DJI O3模块
- M2*10机制螺丝 内六角圆柱头天线
- M1.4*5自攻螺丝 十字平圆头带垫

6. 遥控器和飞机对频

Pavo20 Pocket整机集成ExpressLRS 2.4G接收机,出厂默认ExpressLRS 3.0协议。
使用遥控器与飞机对频,确保您的遥控器使用的协议和Pavo20 Pocket整机的协议是一致的,并且已经配置正确了遥控器通道(通道配置为AETR1234)。

下面以遥控器LiteRadio 2 SE,美国手版本(左手油门)为例进行说明。

对频步骤如下所示:

● 确保遥控器当前协议为ExpressLRS 2.4G协议第3版,即ELRS 3.0版本;

● 飞机连续上电三次,每次通电时间保持1秒,待第三次上电之后飞机上的状态灯变为绿色,并且开始缓慢闪烁,即进入对频模式;

● 遥控器开机,等待遥控器初始化完成;

● 用螺丝刀轻按遥控器背部的BIND按键,遥控器LED红色快速闪烁;

● 如果对频成功,则飞机状态灯变为蓝色常亮,连接正常。

注意:
1. Pavo20 Pocket集成的Serial ELRS 2.4G接收机出厂默认支持ExpressLRS 3.0协议;使用ExpressLRS 1.X或者ExpressLRS 2.X协议无法对频连接;
2. Pavo20 Pocket集成的Serial ELRS 2.4G接收机可以通过ExpressLRS上位机使用Passthrought功能,建议更新ExpressLRS 3.X即可,更新为ExpressLRS 2.X可能存在失败的风险;
3. 对频成功之后,重启飞机或者遥控器,将会自动完成连接,无需每次上电重新对频。
4. 遥控器与飞机重新对频时,可能按压一次遥控器BIND键后无法完成对频操作,此时需要按压第二次遥控器对频键才能完成对频。
5. 您也可以通过扫描"飞行前注意事项"第7点提供的二维码,通过教学视频了解遥控器如何与飞机对频。

7. OSD设置菜单操作

下面以遥控器LiteRadio 2 SE,美国手版本(左手油门)为例进行说明。
进入OSD设置菜单的打杆方式如下图所示,油门摇杆在中位向左打杆到底,方向摇杆同时向上打杆到底。注意,必须确保飞机是在上锁状态才能进入OSD菜单。

摇杆向上

摇杆向左
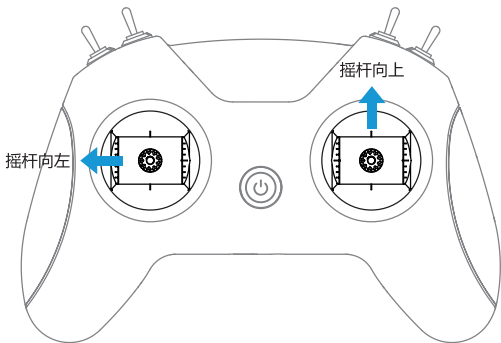
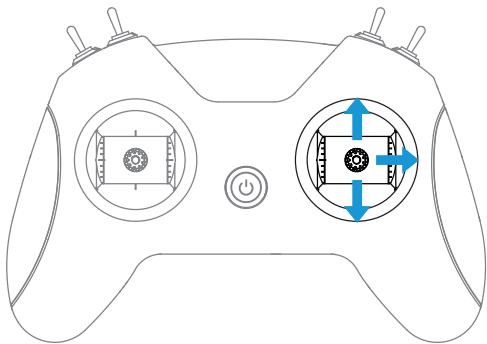进入OSD菜单之后，可以在FPV图像中看到如下图所示的主菜单界面。


```
             - MAIN -

           >CONFIG            >
            OPTION            >

            SAVE
            EXIT
```

可以通过方向摇杆控制OSD菜单光标，从而进行OSD界面操作：

● 往上打，光标往上移动

● 往下打，光标往下移动

● 往右打，确定/修改

| ⬆ 摇杆向上：
光标向上移动 | ⬇ 摇杆向下：
光标向下移动 | ➡ 摇杆向右：
进入子目录/确认 |

8. 飞机水平校准

飞机在多次起落之后，可能会出现飞机陀螺仪数据偏移的问题，表现为飞机飞起来之后，朝单一方向倾斜。这个时候，可以将飞机进行陀螺仪数据校准。校准步骤如下：

● 将飞机和遥控器开机，并且确保连接成功；

● 将飞机放置于水平平面上；

● 通过遥控器操作，进入OSD设置菜单；

● 在MAIN主界面，选中CONFIG并进入CONFIG界面，并且将光标移动到CALI所在行。如下图所示；

● 向右打方向摇杆，进入飞机水平校准，飞机蓝灯闪烁；

● 当后面出现OK提示，飞机恢复蓝灯常亮时，校准完成，退出OSD菜单即可。

```
       - CONFIG -

        TOF          OFF
        OPF          ON
        LED          OFF
       >CALI         OK
        BACK
```

9. 电池使用注意事项

套装配套的电池型号为BT3.0 550mAh 2S锂电池

免责声明：使用前必须仔细阅读并严格遵守所有说明和注意事项。

放电注意事项

● 在放电过程中，电池的温度不得超过140°F。

● 在负载情况下，切勿将电池放电至总电压6V以下。

● 如果用户发现电芯电压不平衡或电芯鼓起、漏液或其他异常，请停止使用。

充电注意事项

● 每次充电前务必检查电压。

● 充电前务必检查蓄电池是否有任何类型的损坏。

● 只能使用为锂聚合物/锂离子电池设计的充电器，并验证其状况良好。

● 切勿对电池过度充电（每节电芯4.35V）。

● 充电过程中，电池需要有人员在一旁看管。

10. 飞机电池充电

套装配备的BT3.0 550mAh 2S HV锂电池最长可以飞行4.5分钟左右。当OSD飞行界面上显示LOW VOL，表示飞机电池电量过低，需要充电。该电池充满需要25分钟左右，充电步骤如下：

1. 使用适配器的Type-C接口连接充电器，将适配器接入电源中；

2. 然后将2S电池的BT3.0端子连接充电器，充电器即可对2S电池进行充电；

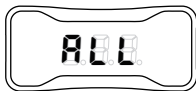3. 数码管显示电池电压，红灯常亮，电池正在充电；数码管显示矩形符号，红灯熄灭，电池已经充满，充电结束。

P⚡ 适配器　——　Type-C接口　8.00I　BT3.0接口　2S电池
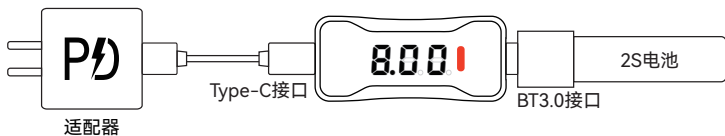
注意：
1. 请注意设备上的正负极标示，勿将电池端口正负极反向连接充电器；
2. 本充电器支持高压2S电池充电，使用本充电器给普压2S电池（8.4V）充电存在过充的危险，请注意分辨电池类型；
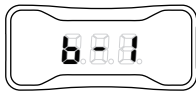3. 充电中，若数码管显示电压超过8.7V，（例如9V）需及时断电，检查电池和充电器是否异常。

显示状态说明

将2S电池接入充电器，充电器分别显示该2S电池的总电压及两片电芯的电压。

电池总电压：

ALL　　　8.00

电芯一电压

b-1　　　4.00

电芯二电压

b-2　　　4.00

充电器的数码管及红灯，用于指示充电器的工作状态：

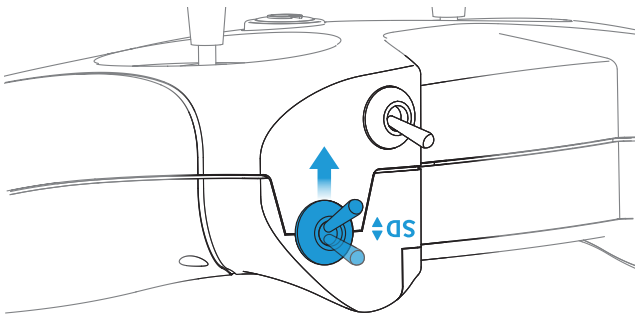| 数码管	指示灯	状态说明
围绕矩形流动	红灯熄灭	未充电
总电压	红灯常亮	正在充电
矩形符号	红灯熄灭	已充满
无显示	红灯闪烁	电池异常

注意：充电器出现无法充电或红灯闪烁时，请及时检查电池是否正常或更换电池充电。

11. 反乌龟模式

当飞机掉落地上，并且正面朝下的时候，可以通过遥控器使用反乌龟模式把飞机翻过来。
基本步骤如下：
下面以遥控器LiteRadio 2 SE，美国手版本（左手油门）为例进行说明。
● 把SD拨杆从下到上拨动一次，开启反乌龟模式，OSD图像中显示TURTLE。如下图所
示；
● 朝任一方向拨动方向摇杆，马达转动，飞机反转过来；
● 把SD拨杆拨到最下，关闭反乌龟模式；
● 重新解锁飞机，正常飞行。

飞机反面朝上时，从下到上拨动一次开启反乌龟模式

12. 悬停故障排除指南

普通模式下，飞机的光流定位功能处于开启状态，该功能可以实现飞机水平方向的飞行辅助，将油门摇杆放至中位时，能够实现精准的定点悬停。如果起飞之后悬停不稳，朝某个方向偏飞，可以通过下面几个步骤排除故障。

常见问题一：马达桨叶出现堵转或者损坏;
解决方案：常见的如清理马达上缠绕的头发等异物，或者更换损坏的桨叶，避免桨叶旋转时摩擦到机架保护环;

常见问题二：环境光线太暗，或者在水面上方，导致悬停定位功能的光流传感器失效。
解决方案：请到地面特征较明显，光线较为充足的环境下飞行，需要尽量避开难以识别地面特征的不良环境（如光线较暗的环境或水面上方），否则飞机可能会出现漂移或控制困难的问题。
若需要在上述不良环境中飞行，可以关闭飞机的光流定位功能。光流定位功能关闭后，飞机会失去水平方向上的飞行辅助，因此要求飞行者有较好的飞行基础。可以进入到OSD设置界面关闭/开启光流定位功能。

常见问题三：飞机在碰撞或者掉落时，强烈振动导致了陀螺仪传感器数据发生偏移，且无法自动修复。
解决方案：进入OSD菜单进行一次手动校准陀螺仪。

```
- CONFIG -

     TOF              OFF
     OPF              ON
     LED              OFF
    >CALI             OK
     BACK
```
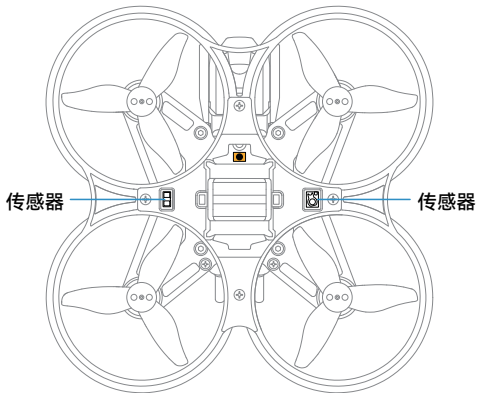
注意：设置OSD菜单请参考说明书"OSD设置菜单操作"章节，详细的陀螺仪校准过程请参考说明书"飞机水平校准"章节。

常见问题四：环境风速大于3级导致悬停不稳。

解决方案：在风速过大的环境下，建议使用S档或者M档飞行。或者关闭光流定位功能，手动控制飞行的水平位置。可以进入到OSD设置界面关闭/开启光流定位功能。

常见问题五：因传感器脏污导致悬停不稳。

解决方案：请确保传感器下方没有被异物遮挡，传感器表面没有影响其精度的污渍和灰尘。飞行辅助异常时可以擦拭干净传感器再继续使用。

传感器 ———— 　　　　　　　　　　———— 传感器

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