BETAFPV

—— P1高清图传 | P1 Digital VTX ——

Aquila20

FPV套装 | FPV Kit

快速入门手册 | QUICK START GUIDE

第 I 版　2025-11-13

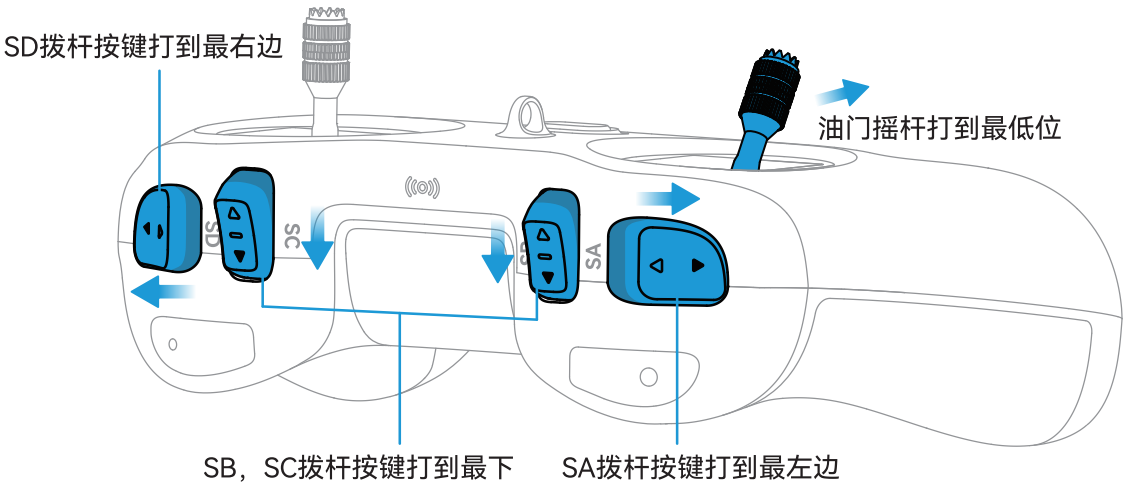
1. 飞行前注意事项

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，遥控器摇杆功能详情见遥控器操作。
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。

2. 快速启动

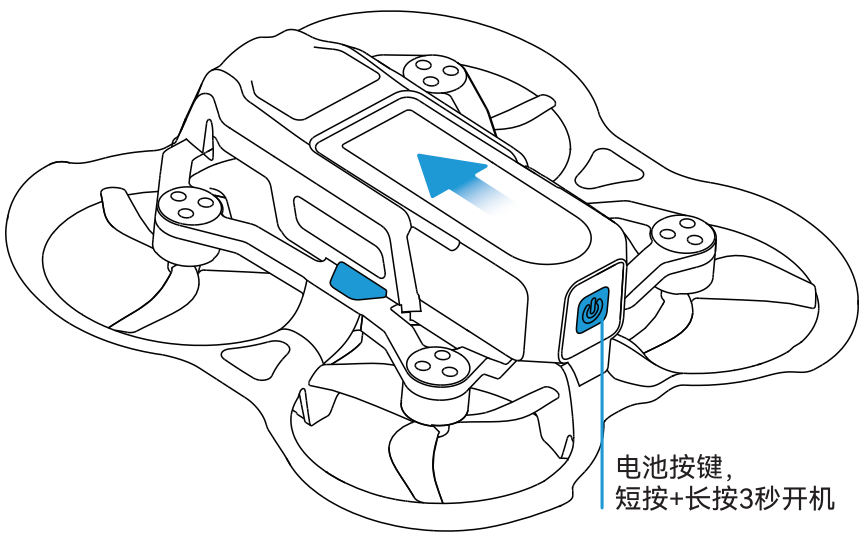
快速试飞用于验证飞机和遥控器基本功能正常，并且可以连接成功，飞机可以正常起飞飞行。

● 第一步：取出遥控器，将左边油门摇杆打到最底处，顶部4个拨杆拨到图示位置。短按+长按遥控器电源键3秒，遥控器响滴滴滴三声后松开，电源指示灯红色变为蓝色常亮，遥控器成功开启。

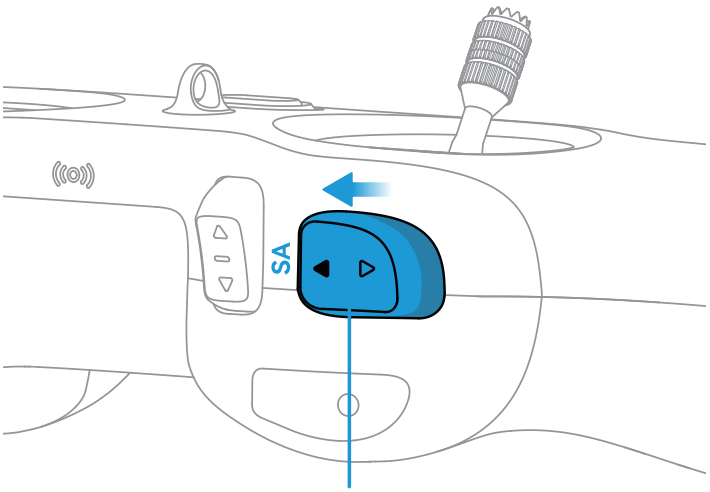


注意：这里的方位描述，都是指操作者正常手持遥控器操控飞行时，相对于操作者的前后左右上下；后述也是一样。

● 第二步：将电池插入飞机背面的电池槽，短按+长按电池按键3秒开机。然后将飞机水平放至地面。等待3-5秒，飞机上LED状态灯由蓝色闪烁变至蓝色常亮，表示飞机初始化完成并且和遥控器连接成功。

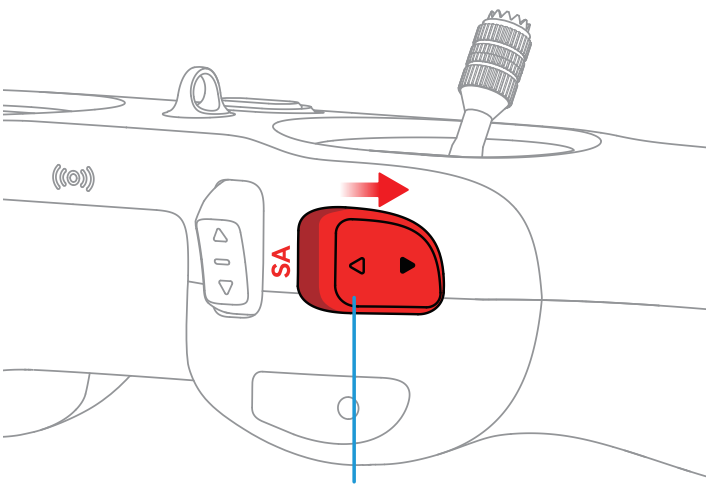


● 第三步：解锁前，左边摇杆油门必须置于最低位，将遥控器上拨杆按键SA拨动右边位置。解锁成功后，电机低速旋转。将拨杆按键SA拨动到左边位置，锁定飞机，马达停止转动。



拨杆按键SA最右边位置，解锁飞机

● 第四步：飞行结束之后，将飞机平稳降落地面。遥控器拨杆按键SA拨动到左边飞机进入上锁状态，如下图所示。



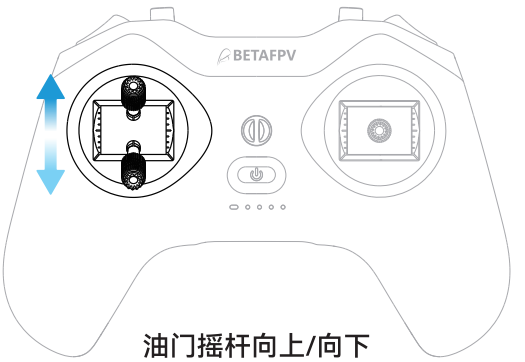
拨杆按键SA最左边位置，锁定飞机

● 第五步：短按+长按飞机电池按键3秒断电。短按+长按遥控器电源键3秒，遥控器响滴滴滴三声后遥控器关闭。

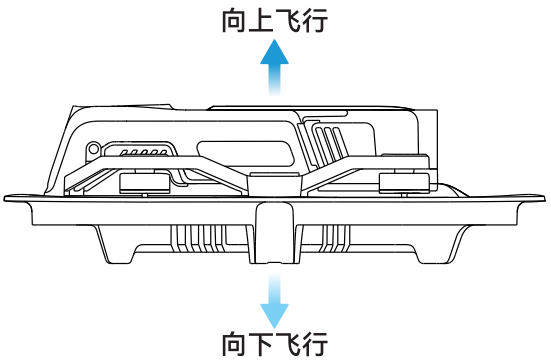
3. 操控飞行

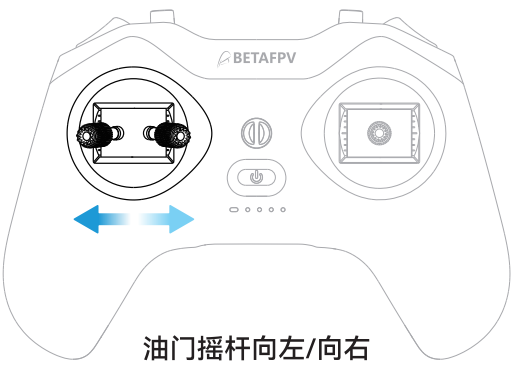
按照上面“快速启动”段落的前三步的方式，解锁飞机，即可进行下面的操控飞行。

使用遥控器左边摇杆（又叫油门摇杆）控制飞机的上升下降以及旋转。

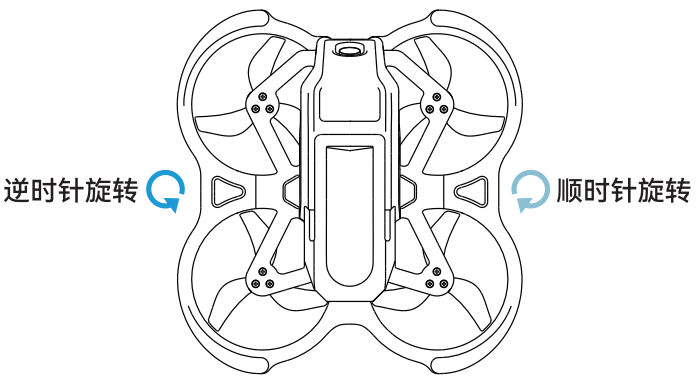


油门摇杆向上/向下

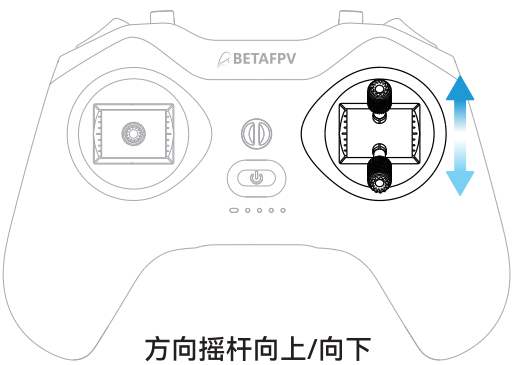




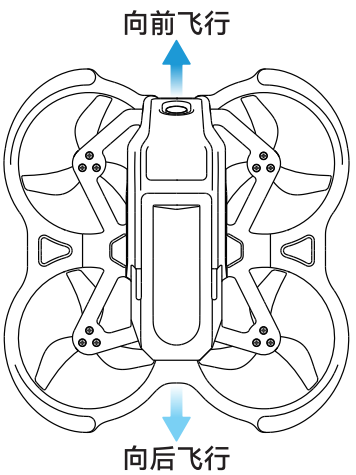
油门摇杆向左/向右

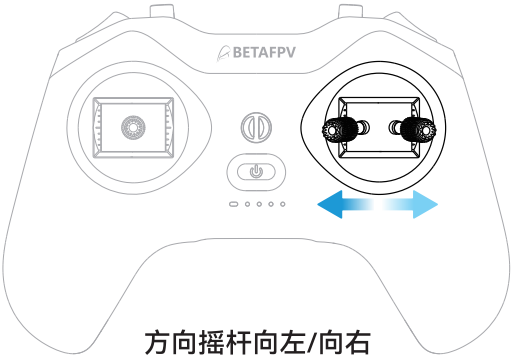


使用遥控器右边摇杆（又叫方向摇杆）控制飞机前进后退，向左飞行，向右飞行。

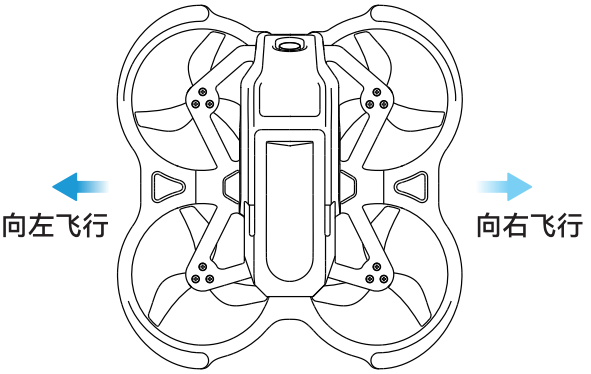


方向摇杆向上/向下





方向摇杆向左/向右



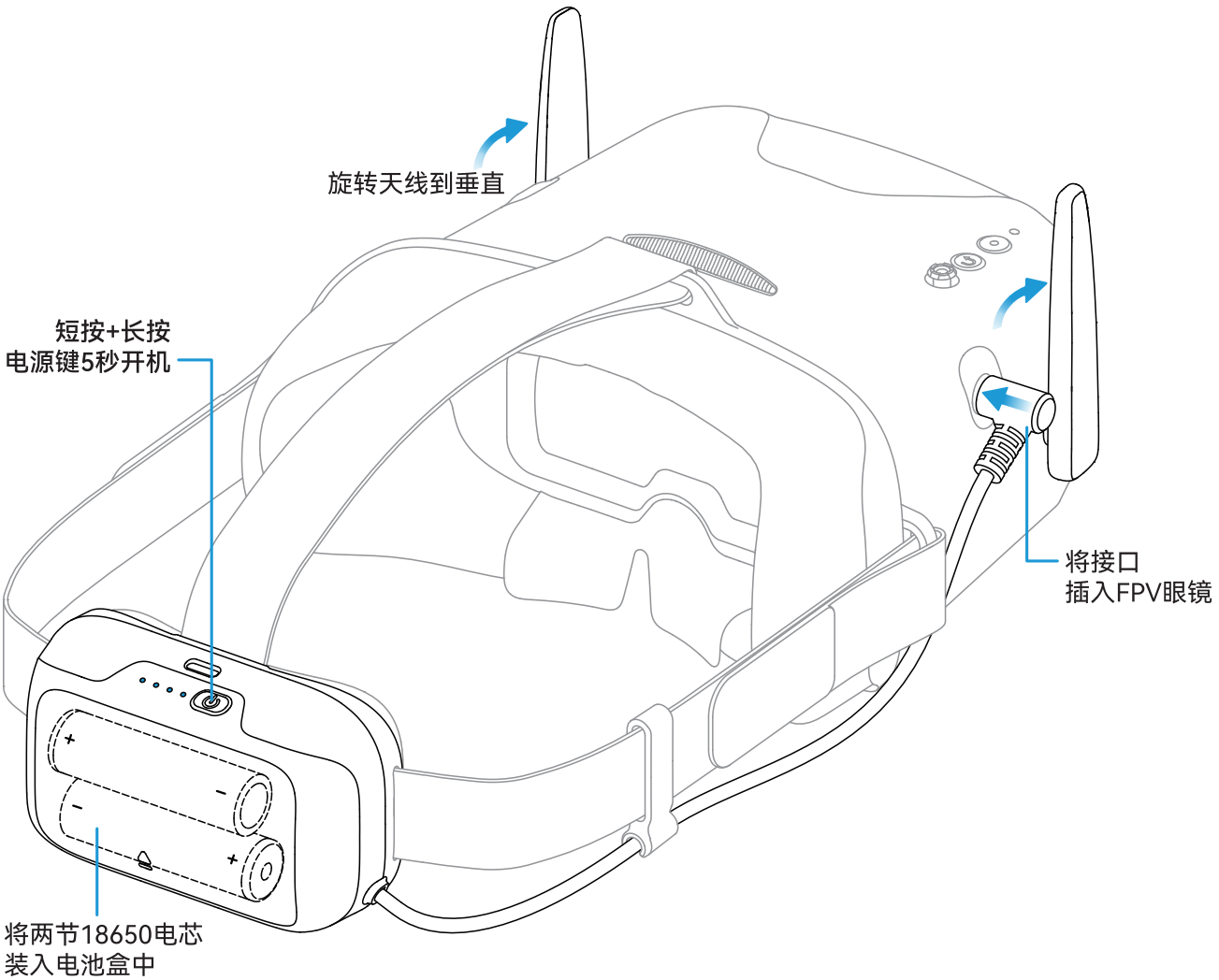
建议用目视飞行的方式，首先练习上面基本的操控飞行，掌握和习惯摇杆的灵敏度。

注意:

1. 第一次操控遥控飞机，一定要到宽阔场地练习操控飞行。
2. 第一次操控遥控飞机，摇杆的推动一定要缓慢进行，尤其是油门摇杆。
3. 当无法控制飞机或碰撞到物体导致飞机坠毁时，迅速往下拨动SA拨杆按键进行上锁，电机将停止转动。

4. FPV飞行

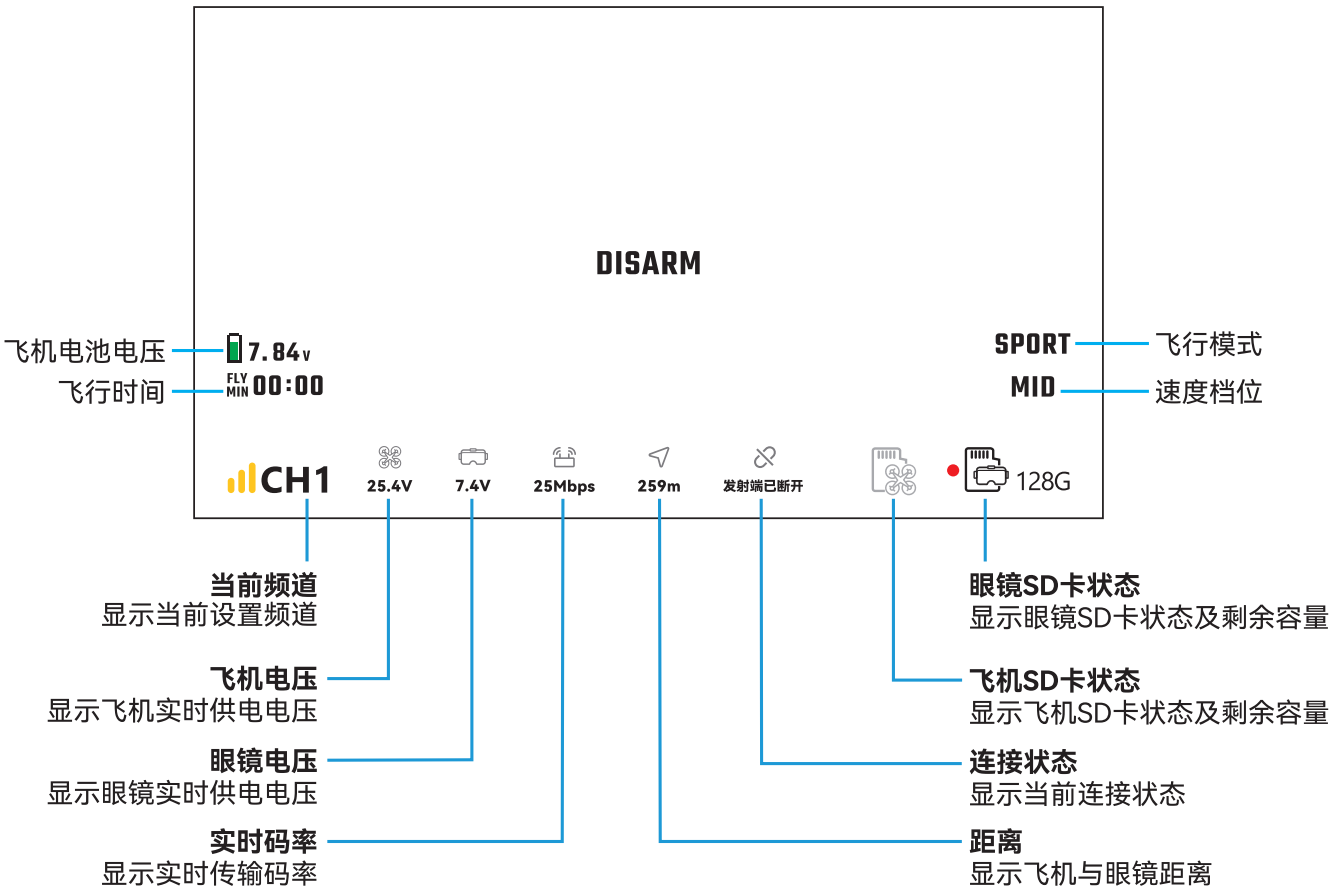
FPV（First Person View）飞行即第一视角飞行，指通过观察飞机上摄像头传回到FPV眼镜的画面，操控飞机飞行。
取出FPV眼镜，将两侧天线旋转到垂直方向。短按再长按眼镜电池盒电源键5秒开机，屏幕亮起。如果此时飞机已经上电，等待3-4秒左右，FPV眼镜就会接收到飞机摄像头传过来的图像。



注意：
1. 如果飞机处于静止状态（指桨叶未旋转起来），飞机图像发射功率低（处于Standby模式，降低图传发射功率，减少发热），建议FPV眼镜保持在2米范围内。并且图像较为模糊是正常现象。长时间静置（如超过4分钟）会出现飞机图传发热保护，图像传输断连问题。建议尽快离地飞行散热。
2. 飞机解锁，桨叶转动之后，有气流散热，飞机图像发射功率恢复到默认设置，图像画质恢复正常。

5. OSD飞行界面

FPV眼镜和飞机连接成功后，可以在显示屏中看到飞机摄像头的图像和飞行信息，这些飞行信息又叫做OSD（On Screen Display）信息，如下图所示。



下面分别对几个关键的OSD信息进行说明：

- 正中央显示飞机的飞行状态，DISARM表示上锁状态，TURTLE表示反乌龟状态，LOW VOL表示飞机电池电压低，RX LOSS表示飞机遥控器连接失败；
- 屏幕两侧分别显示飞机的状态信息，包括飞机电池电压，飞行时间，飞行模式以及速度档位；
- 屏幕底部分别显示图传的连接状态，包括图传信号强度、飞机电压、眼镜电压、码率、飞行距离、连接状态、SD内存。

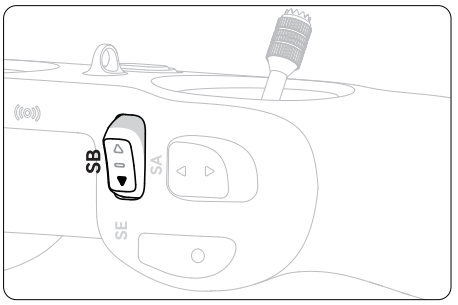
6. 飞行模式

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。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。

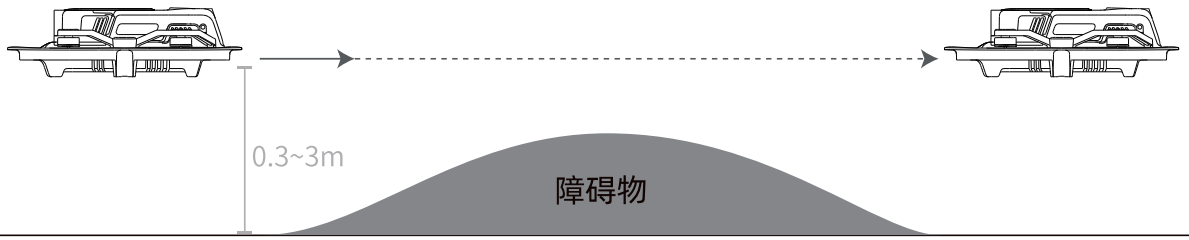
普通模式（N MODE）

普通模式：即定高定点模式，OSD上显示N MODE，同时具有垂直和水平方向的飞行辅助。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，操作较为简单。入门飞行者仅需稍加练习即能实现简单飞行。

难度系数：★★☆☆☆



SB拨杆按键打到最下



注1：在使用普通模式飞行时，尽量选择室内或无风室外环境，飞行高度控制在0.3m-3m之间，室外飞行高度尽量不超过3m。

注2：在普通模式下，恶劣的飞行环境可能会造成不好的飞行体验，请避免在以下环境下飞行：

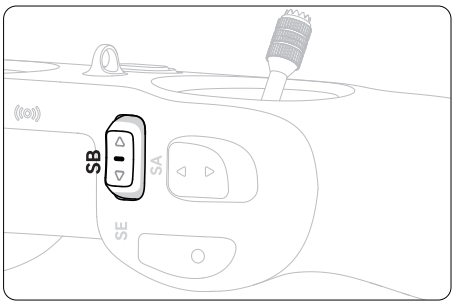
- 水面或过于光滑的地面上方（会影响水平方向的飞行辅助，导致定位不精准）；
- 阳光较大的环境或纯黑色的地面上方（会影响垂直方向的飞行辅助，导致高度控制不精准）；
- 有较大风干扰的环境（会影响整体飞行）。

注3：在普通模式下，飞行限高20米。超过时OSD信息显示HEIGHT LIMIT。

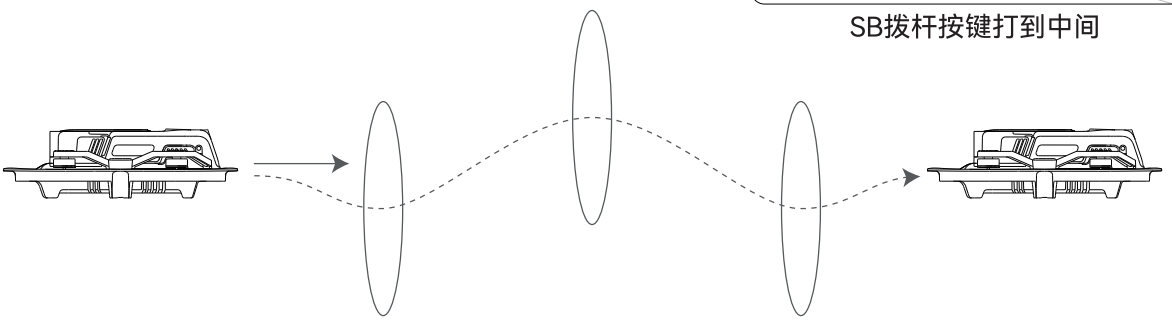
运动模式（S MODE）

运动模式：OSD上显示S MODE，无飞行辅助，完全需要飞行者通过油门摇杆自行控制飞行高度，方向摇杆归中后，飞机会保持水平姿态。操作较为困难，适合操作熟练的飞行者飞行。

难度系数：★★★⯪☆



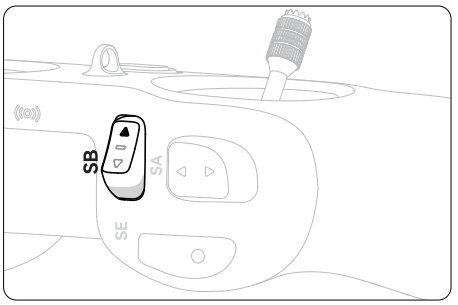
SB拨杆按键打到中间



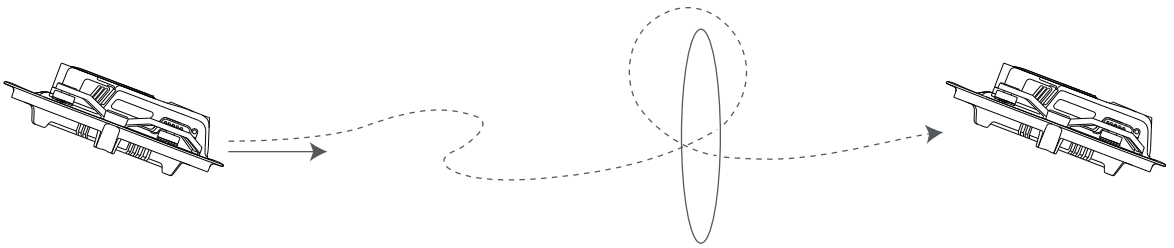
手动模式（M MODE）

手动模式：OSD中显示M MODE。无飞行辅助，完全需要飞行者自行控制飞行高度和姿态，方向摇杆回中后，飞机会保持当前姿态，可以进行特技飞行。操作难度大，需要经过大量练习才能使用该模式飞行。

难度系数：★★★★★



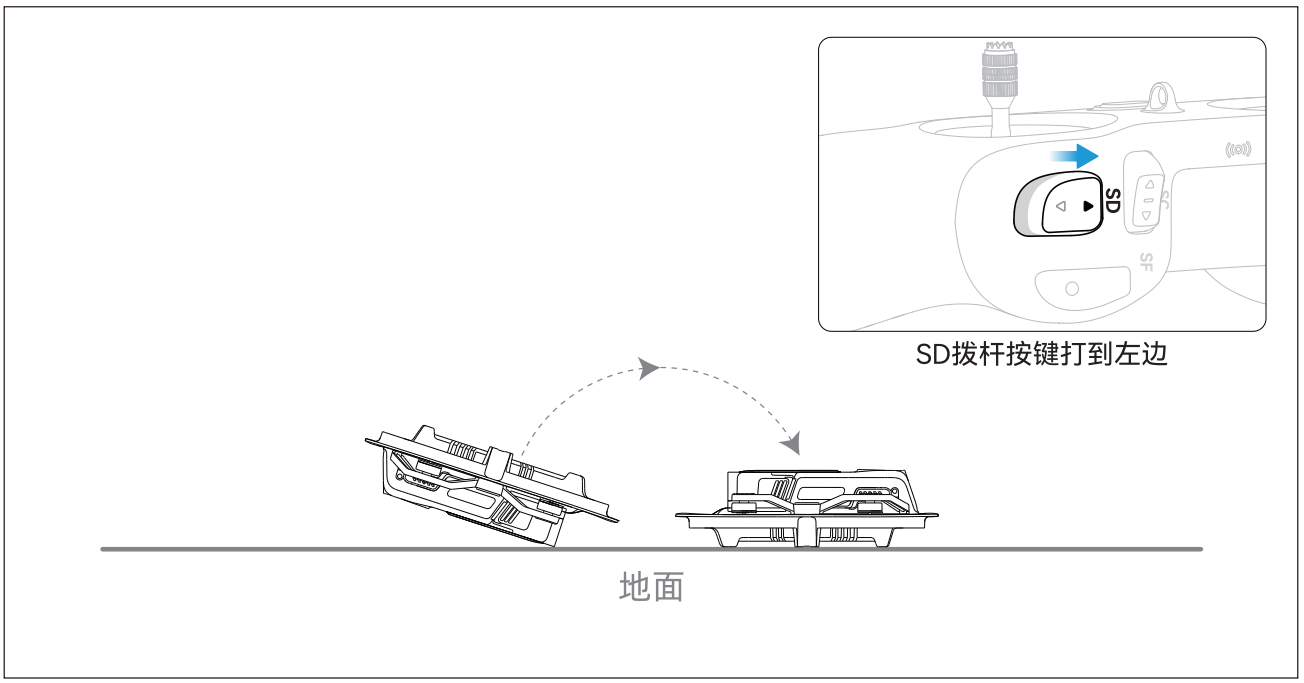
SB拨杆按键打到最上



反乌龟模式

反乌龟模式：OSD中显示TURTLE。落地后机身若是反面朝上的状态，可通过启用反乌龟模式，使马达反转，将飞机翻转回正面。

- 把SD拨杆按键从右拨到左边，开启反乌龟模式，OSD图像中显示TURTLE。
- 朝任一方向拨动方向摇杆，马达转动，飞机反转过来；
- 把SD拨杆按键从左拨到右边，关闭反乌龟模式；
- 重新解锁飞机，正常飞行。



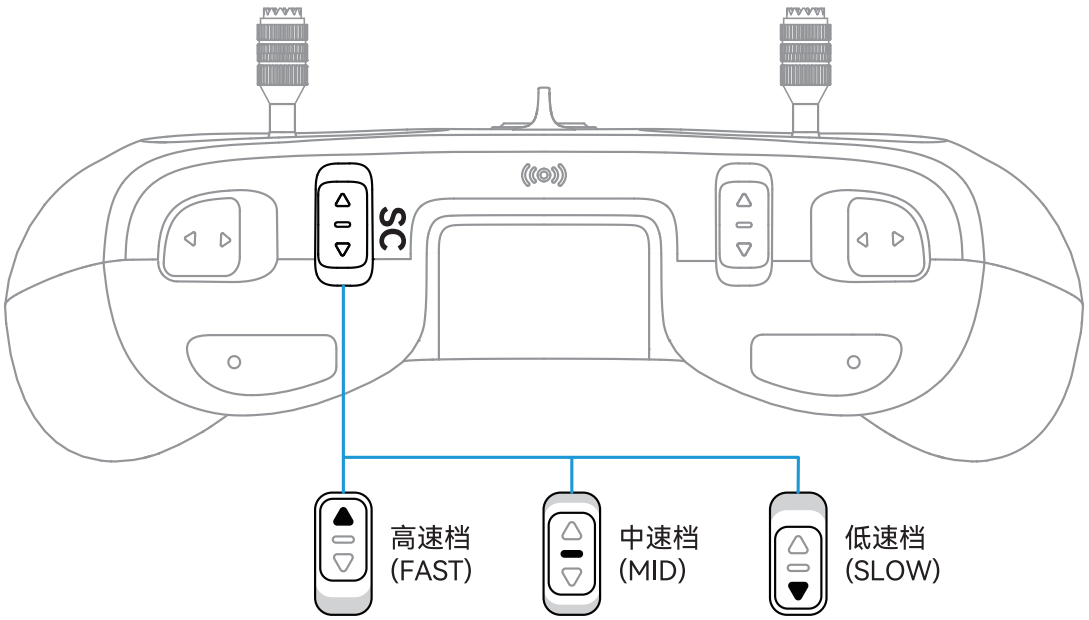
注意：

1. 反乌龟模式建议在较为平整地面进行。如果掉落在草地、织物等表面，飞机正面朝下时，可能会有异物卡住马达，若强行使用反乌龟转动马达，会导致飞机损坏。
2. 当飞机电池电量过低时，如≤3.5V时，飞机可能无法完成反乌龟动作，这时需要手动回正机身。

7. 低速/中速/高速切换

可以通过遥控器拨杆按键SC控制飞机的速度档位：

- 向下时为低速档（SLOW）；
- 中间时为中速档（MID）；
- 向上时为高速档（FAST）。



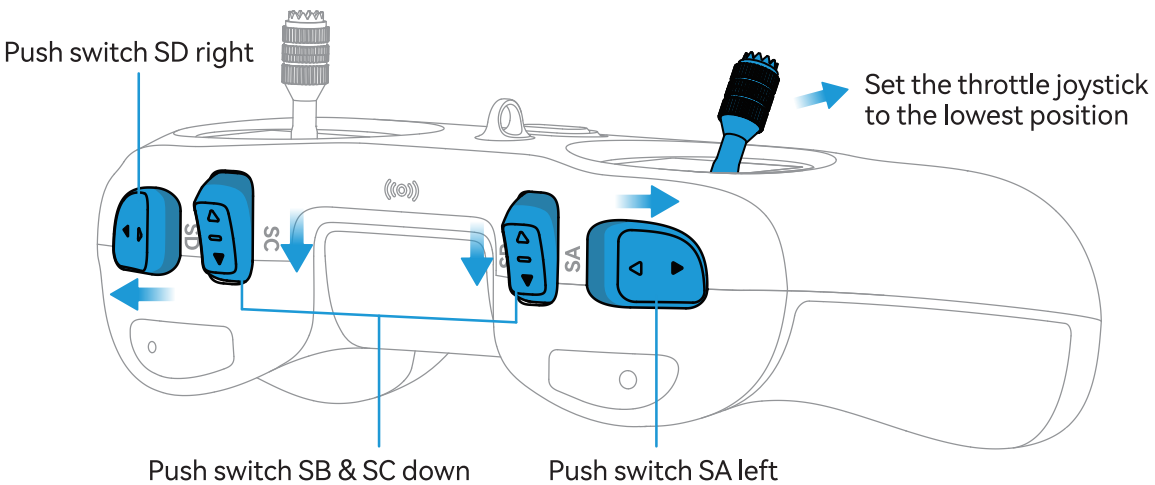
1. Preflight Checks

1. Please check the package list first to ensure all devices and accessories are included and without any damage, and the whoop frame is not deformed.
2. Verify that propellers and motors are installed correctly and securely.
3. Ensure that propellers do not scratch against frame ducts and motors spin smoothly.
4. Verify batteries (of Aquila20 quadcopter, LiteRadio 4 SE radio transmitter, and VR04 HD FPV goggles) are fully charged.
5. Be sure pilot is familiar with all flight controls functions of Literadio 4 SE . (Refer “Remote Control Radio Transmitter”).
6. Always keep a safe distance in all directions around the quadcopter (1 meter or more) when having a test-flight. Fly the quadcopter carefully in open space.

2. Quick Start

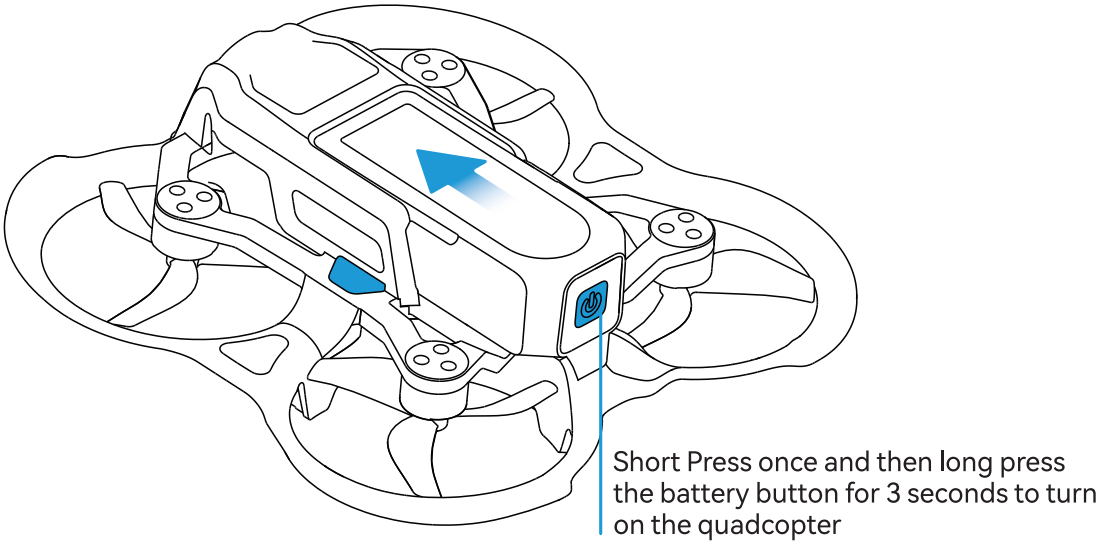
It's necessory to have a quick flight test to verify that quadcopter and remote control radio transmitter are functional normally, including the basic functions, binding status, and takeoff.

• Step 1: On the remote control radio transmitter, set the throttle joystick to the lowest position and four switches to the positions shown in the diagram. Short Press once and then long press the power button for 3 seconds until it beeps three times. When the power indicator turns from red to solid blue, it means the remote control radio transmitter has been powered on.

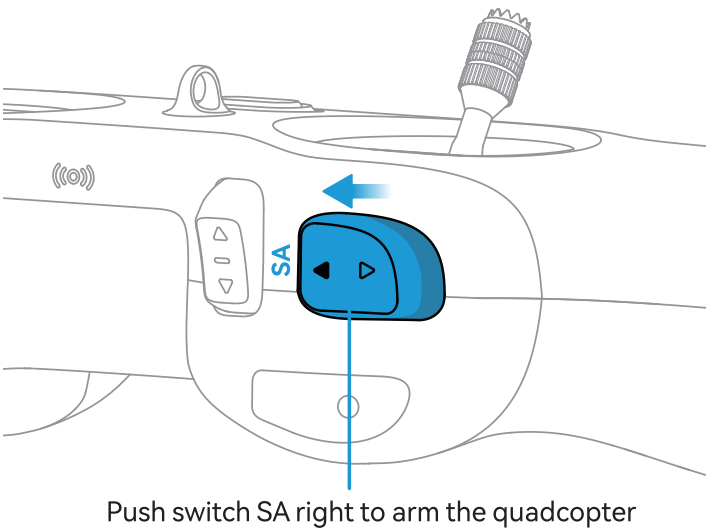


Note: The directional instructions (right, left, up, down) refer to the pilot's perspective while holding the remote control radio transmitter. This applies to all subsequent instructions.

• Step 2: Install battery into the battery mounting slot above the quadcopter. Short Press once and then long press the battery button for 3 seconds to turn on the quadcopter, and then place it on a horizontal surface. Wait 3-5 seconds until its status LED lights change from flashing blue to solid blue. This indicates that the initialization of the quadcopter is completed and the quadcopter is connected successfully with the controller.

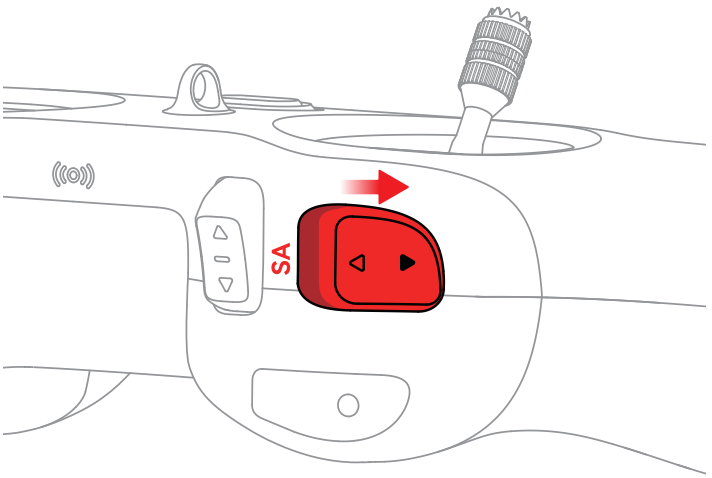


● Step 3: The throttle joystick must be at the lowest position when the quadcopter is arming. Push switch SA right to arm the quadcopter. After successfully armed, the motors will spin slowly. Push switch SA left to disarm the quadcopter and the motors will stop spinning.



Push switch SA right to arm the quadcopter

● Step 4: After completing your flight, make sure to land the quadcopter safely and keep it disarmed (push switch SA left), as shown below:

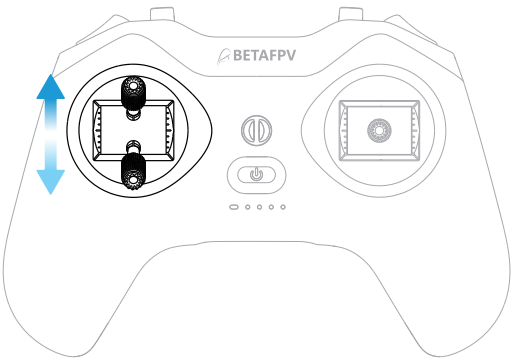


Push switch SA left to disarm the quadcopter

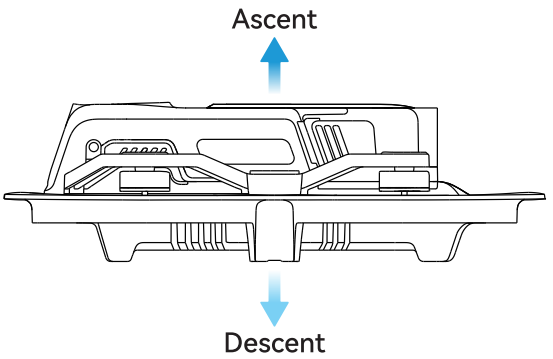
● Step 5: Short press once and long press battery button for 3 seconds to power quad off. Short press once and then long press the remote control power button for 3 seconds, the controller will turn it off after three beeps.

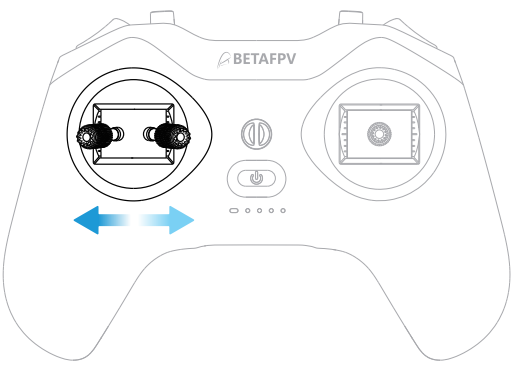
3. Flight Operation

● Re-arm quadcopter (Step1 to Step 3) to start the following flight tutorial.
Use the left joystick (throttle joystick) on the remote controller to control the altitude and yaw.

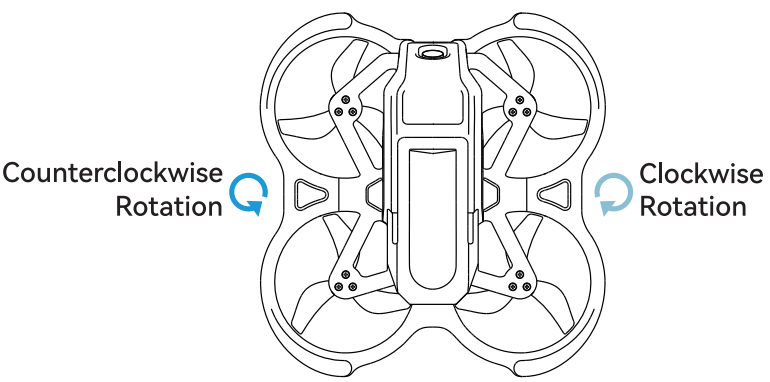


Throttle Joystick Up/ Down

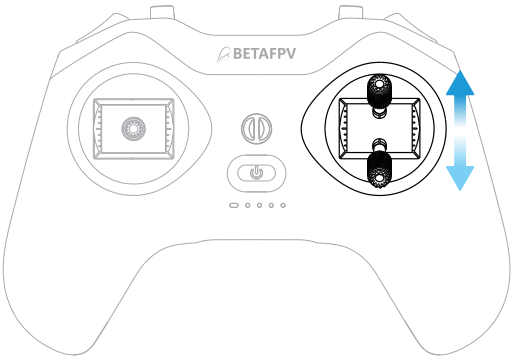




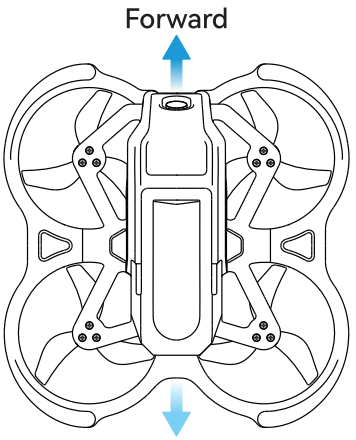
Throttle Joystick Left/ Right

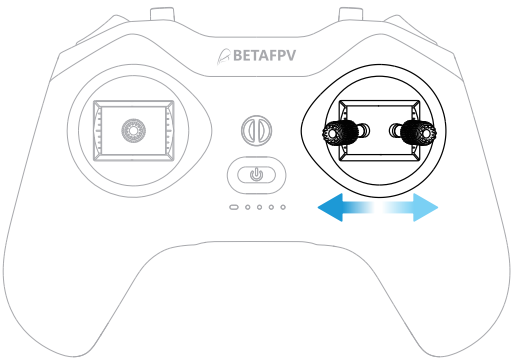


Use the right joystick (direction joystick) on the remote controller to control the pitch and roll movements.

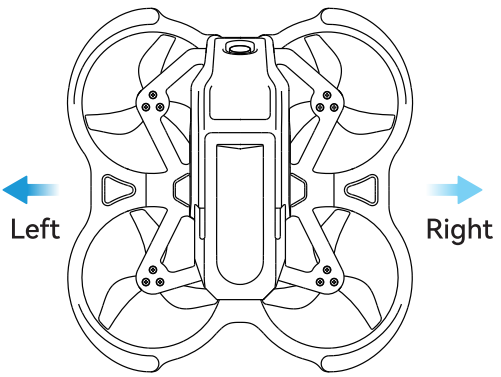


Direction Joystick Up/ Down





Direction Joystick Left/ Right



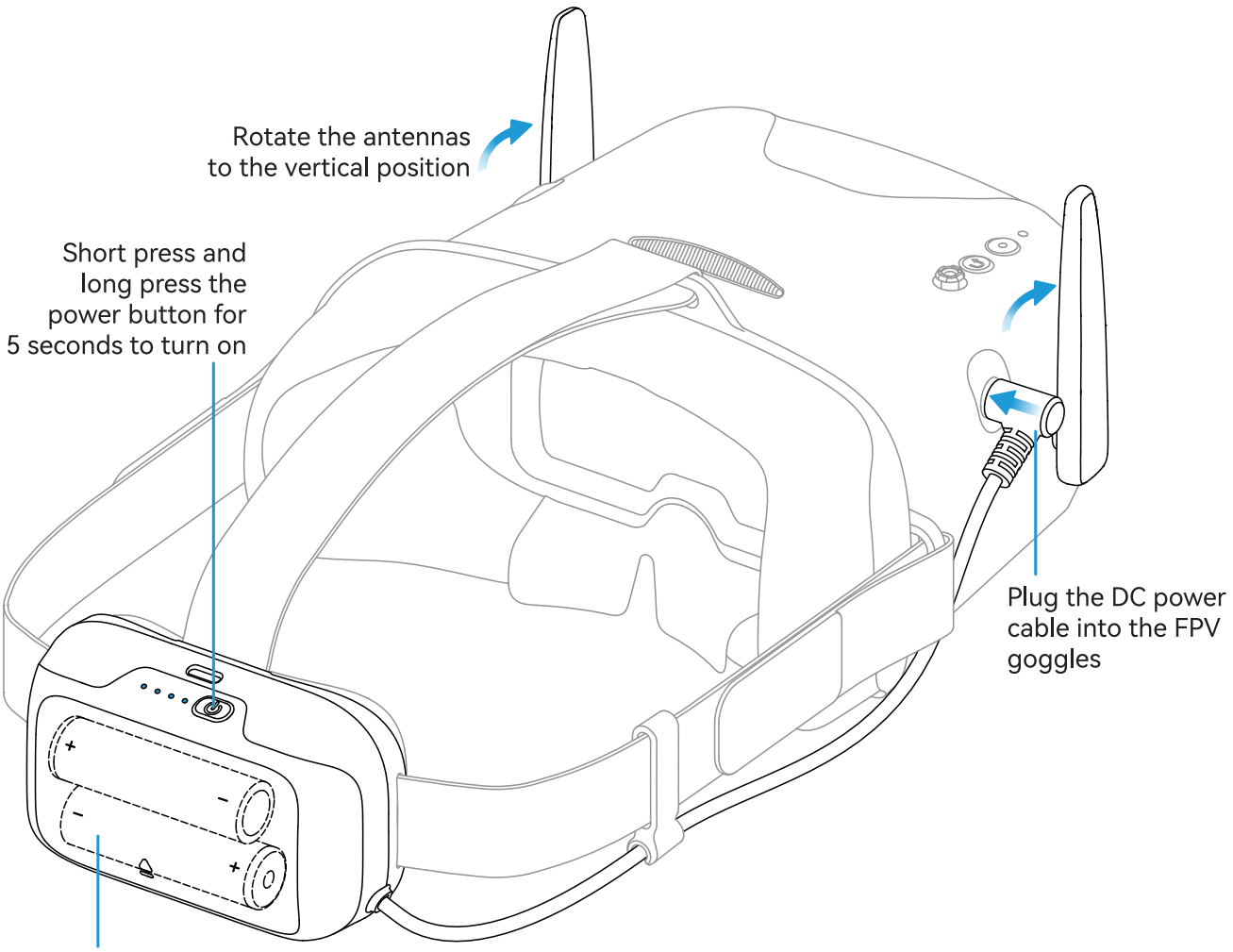
It is recommended to fly within visual line of sight and first practice the basic control maneuvers to get used to the joysticks sensitivity.

Cautions:
1. Find a suitable open space for the first flight.
2. Push the joysticks slowly when you are in your first flight, especially the throttle joystick.
3. If the quadcopter becomes out of control or collides with objects, disarm the quadcopter quickly (push switch SA left) and motors will stop spinning.

4. First Person View (FPV)

First-person view (FPV) is to operate the quadcopter through the real-time image transmitted by FPV googles. Operations for starting googles are shown as below:

- Take out the goggles and install the headband; Rotate the antennas to be vertical;
- Short press once and then long press the FPV goggles power button for 5 seconds to power it on and the screen lights up;
- If the quadcopter is already powered on, wait for 3-4 seconds, and the FPV goggles will receive the image transmitted from the camera.

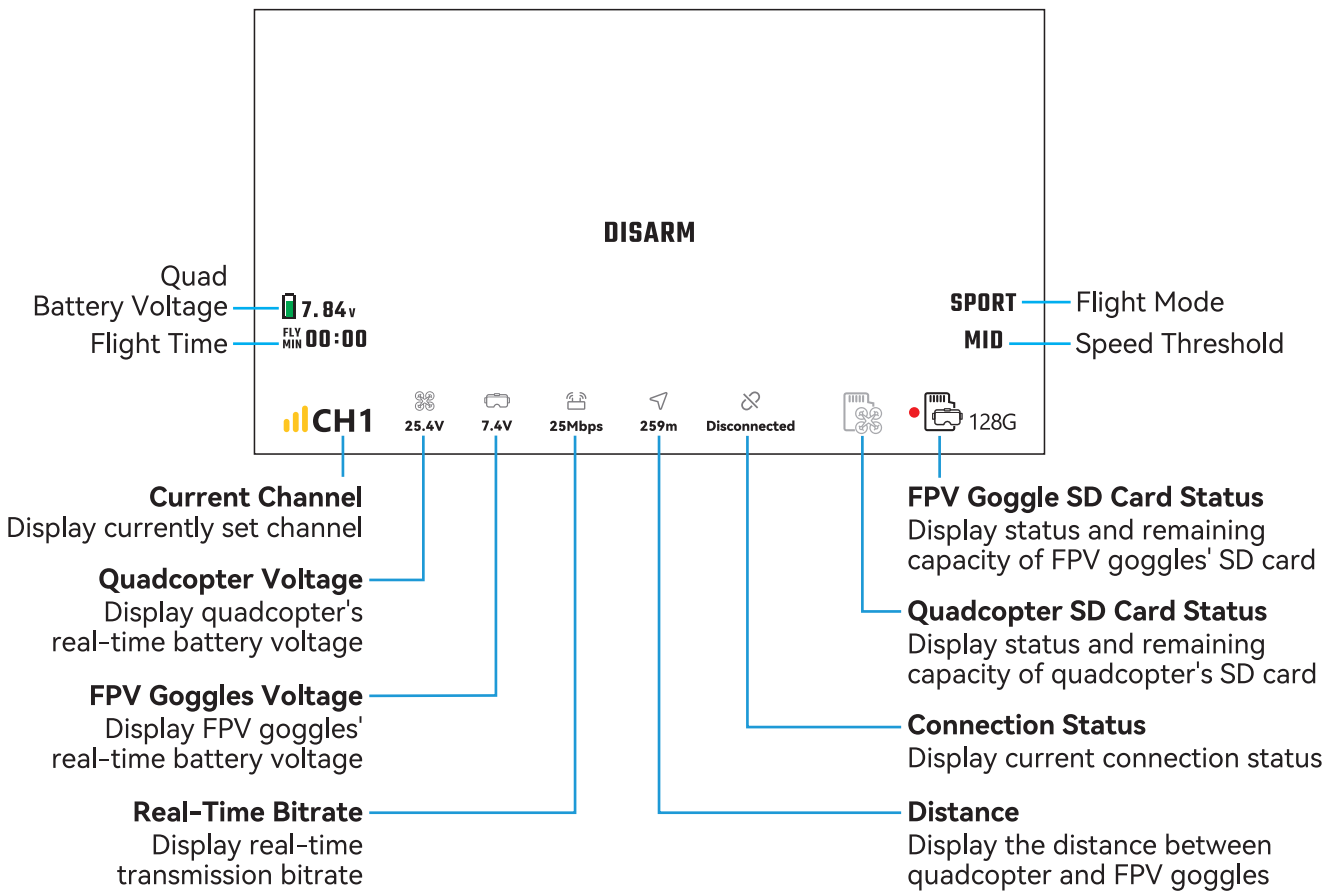


Note:

1. When quadcopter is stationary (i.e., its propellers are not spinning), its image transmission power is low(in Standby Mode, to reduce the heat). It is recommended to keep the FPV goggles within a 2-meter range, and slightly blurry images are a normal phenomenon. When the drone is in Standby mode too long (i.e., more than 4 minutes), the video transmitter will be disconnected.
2. When the quadcopter is disarmed, the spinning propellers will improve VTX cooling. The VTX transmission power and images will be normal.

5. On Screen Display (OSD)

After the FPV goggles and the quadcopter are successfully connected, flight information and FPV camera images will be shown on the display. This information is called On Screen Display (OSD) Info , which is shown as below:



About OSD information:

- The flight status of the quadcopter is displayed in the center. DISARM indicates locked status. TURTLE indicates that the Turtle Mode is activated; LOW VOL indicates that the battery voltage of the quadcopter is low. RX LOSS indicates that the quadcopter has been disconnected with the remote controller.
- Status info of the quadcopter is displayed on both sides of the screen, including quad battery voltage, flight time, flight mode, and speed threshold.
- Connection status info of the video transmitter is displayed at the bottom of the screen, including signal strength, quad battery voltage, goggles battery voltage, transmission bitrate, flight distance, connection status, SD card storage.

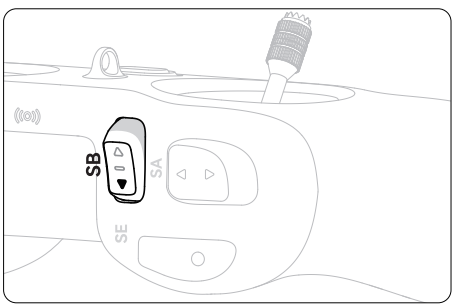
6. Flight Modes

Flight mode is displayed on the lower right corner of the OSD, indicating flying mode of the quadcopter. Pilots can select different modes based on flight environments and flight skills.

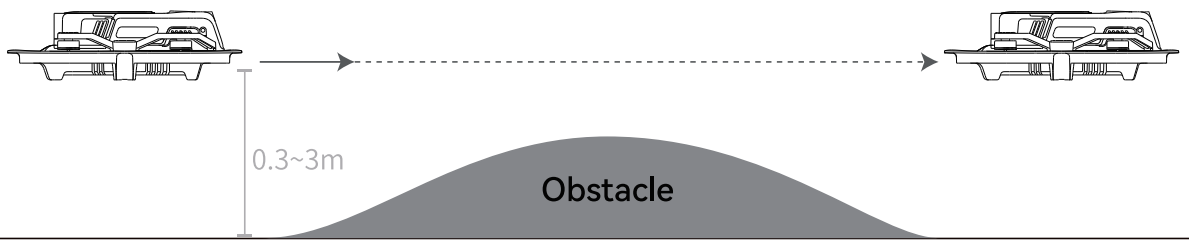
Normal Mode (N MODE)

Also known as Altitude hover & Position Hold mode , displayed as "N mode" on the OSD. This mode provides both vertical and horizontal flight assistance. After takeoff, the quadcopter will automatically hover in place at its current altitude when the throttle joystick is centered. Its straightforward operation allows beginners to achieve stable flight with minimal practice.

Difficulty Level: ★★☆☆☆



Set the switch SB fully down.

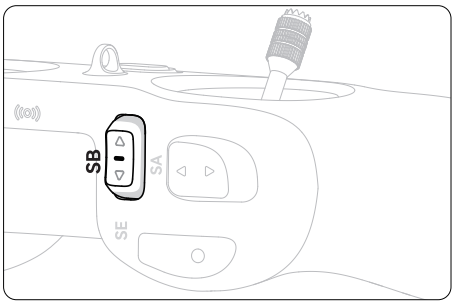


Notes:
When flying in N Mode, please choose indoor or windless outdoor environments and keep the flight altitude between 0.3m and 3m. Do not exceed 3m outdoors for safety and stability.
Adverse environments may degrade flight performance in N Mode. Please avoid flying in the following conditions:
● Flying over water and very smooth surfaces: It may interfere with horizontal flight assistance, resulting in inaccurate positioning hold.
● Under strong direct sunlight or over pure black surfaces: It may interfere with vertical flight assistance, resulting in inaccurate altitude hold.
● In windy conditions: It may negatively impact overall flight stability and control.
In N Mode, the maximum flight altitude is 20 meters. When the quad exceeds this height, 'HEIGHT LIMIT' appears on the OSD display.

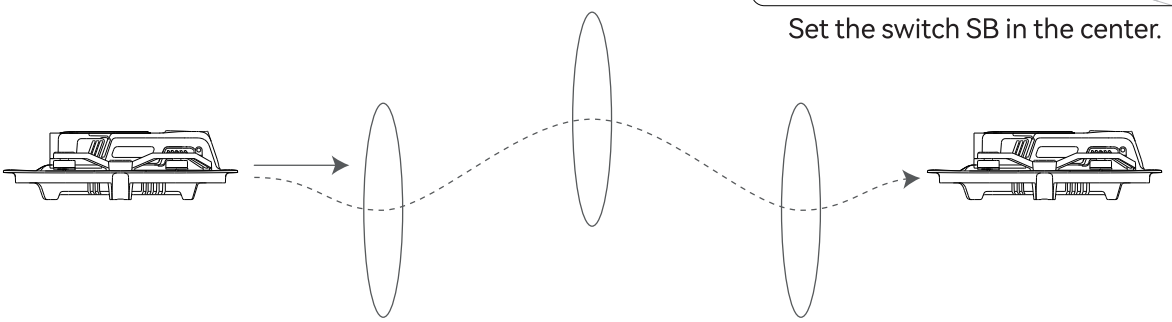
Sport Mode (S Mode)

Displayed as "S MODE" on the OSD. This mode removes all flight assistance, requiring the pilot to manually control altitude via moving throttle joystick. The quadcopter will maintain a level attitude when the direction joystick back to the center position.
Note: More recommended for skilled pilots to use.

Difficulty Level: ★★★⯪☆



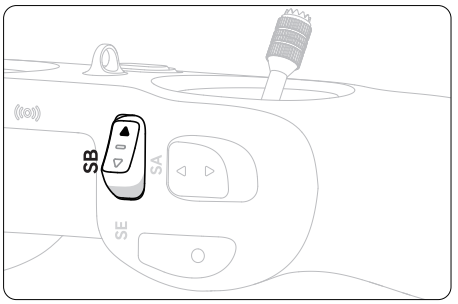
Set the switch SB in the center.



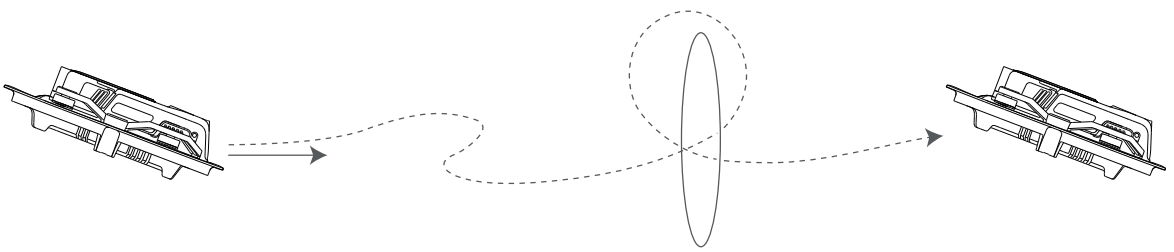
Manual Mode (M Mode)

Displayed as "M MODE" on the OSD. This mode removes all flight assistance. The pilot has full control over quadcopter's altitude and attitude. When direction joystick is centered, the quadcopter will maintain its current attitude to enable freestyle flights. This mode is quite difficult to master and requires extensive practices.

Difficulty Level: ★★★★★



Set the switch SB fully up

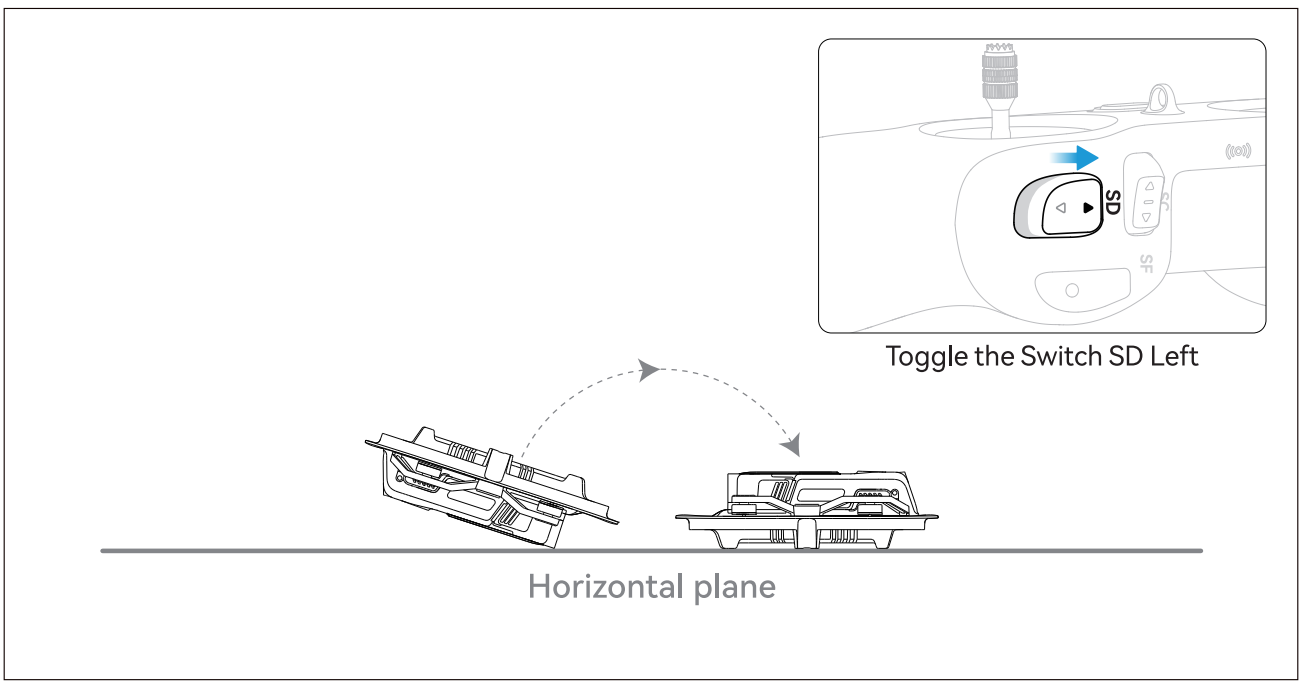


Turtle Mode

Displayed as "TURTLE" on the OSD. If the quadcopter ends up landing upside-down, Turtle Mode can be activated to reverse the motor and turn the quadcopter back to the front.

How to Use:

- Toggle the switch SD to left position to activate Turtle Mode. "TURTLE" will appear on the OSD.
- Move the direction joystick in any direction. Motors will spin, flipping the quadcopter over.
- Operate the switch SD from the left to right position to turn off Turtle Mode.
- Arm the quadcopter again to continue flying normally.



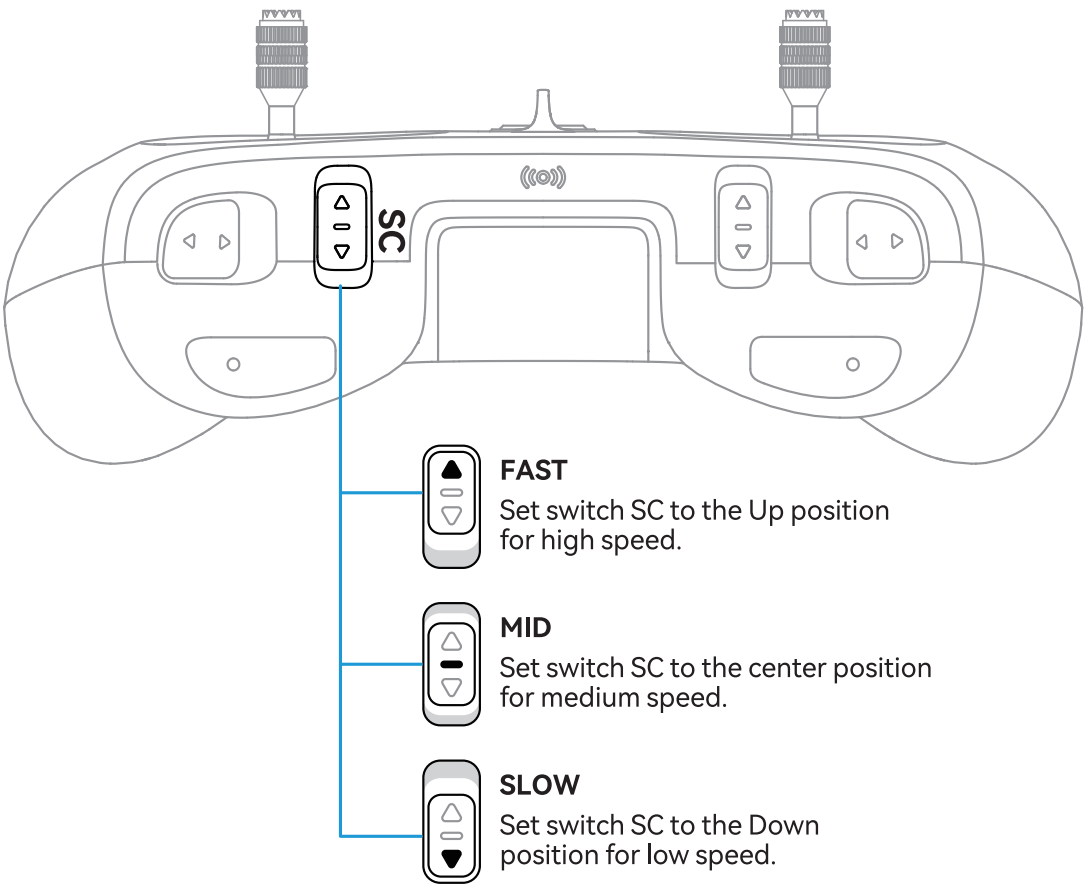
Notes:

Use Turtle Mode only on flat surfaces. If the quadcopter crashes face-down in grass, fabric, or similar, debris may jam the motors. Forcibly activating Turtle Mode in such cases can damage the quadcopter. If its battery is too low (e.g., ≤3.5V per cell) the quadcopter may not be able to flip over. In this case, please manually return the quadcopter to upright position.

7. Speed Setting

Use the switch SC on the remote control radio transmitter to select the flight speed mode.

- SLOW: Set switch SC to the Down position for low speed.
- MID: Set switch SC to the center position for medium speed.
- FAST: Set switch SC to the Up position for high speed.



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