DARWIN HULK

使用说明书

官方淘宝店铺：Darwin FPV 品牌店

官方售后支持微信：DarwinFPVsupport

制造商：深圳市智航星电子技术有限公司

地址：广东省深圳市宝安区石岩街道台湾工业区华蔚科技园 507

官方售后微信二维码

注意事项

①海水具有很强的腐蚀性，不推荐用于海水环境，一旦落入海水中请立即使用淡水清洗。

② 2204.5-2450KV 电机最高支持 4S 电池；2204.5-1750KV 电机最高支持 6S 电池，切记不得将电池接反，否则会烧坏 AIO。

③收到产品后先进入 Betaflight 查看是否有检测陀螺仪和加速度计，以及陀螺仪姿态是否正常。

④在 Betaflight 中拉动油门，确保四个电机正常转动包括电机转向正确，再装桨试飞；拉油门时务必卸桨，以免发生重大事故。

⑤如果不是在水面飞行，为了更低的风阻，请拆掉浮筒以获得更佳的飞行手感！

确认以上注意事项无任何产品问题即可装桨开始爽飞！

产品概述

DarwinFPV HULK 是全球唯一一款防水 FPV 穿越机。它拥有 IP67 等级和超级电子系统保护铠甲，是一款高性能、耐用的摄影 FPV 穿越机，满足您任何恶劣环境下的摄影需求。

产品特点

全天候：所有电子系统均采用铝合金灌封工艺，防护等级 IP67，出色的防水防尘性能，轻松应对各种气候条件及恶劣环境。

好飞：机身紧凑合理的重心分布，飞行姿态稳定、灵活，特别适合 Freestyle

防抖：整机多处减震结构设计，运动相机拍摄时，画面不会有任何抖动。

功能多：6S-45A F4 AIO，内置 ELRS 2.4GHz 接收机，并提供多种带短路保护功能的即插即用接口以满足不同用户需求。

超耐用：HULK 防水电机采用顶级不锈钢轴承，优异的防锈性能，电机使用寿命 2000h+

信号强：巧妙的浮筒设计，落水后可自动反乌龟确保天线总是露出水面以保持信号强度。

易维修：采用全新外观造型，模块化设计-易于维修，结构紧凑-重量仅 290g。

产品规格

品牌：DarwinFPV

型号：HULK 防水穿越机（模拟版本/数字版本）

机架类型：扁 X

轴距：220mm

机身尺寸：224mm x 163mm x 65mm(不包含螺旋桨)

飞控：F411 MPU6500 2x Uarts(1,2) 1x Softserial

电调：BlueJay 3-6S 45A

接收机：SPI ExpressLRS 2.4GHz

摄像头和图传：

模拟版本：HULK Waterproof CAM+HULK 600mW VTX

高清版本：Walksnail Avatar HD Digital Kit

电机：

HULK 2204.5-1750KV (6S Version)

HULK 2204.5-2450KV (4S Version)

螺旋桨：Gemfan Sbang 4934-3

推荐电池：

LiPo 6S 1300mAh(6S Version)

LiPo 4S 1500mAh(4S Version)

飞行时间：7-10 分钟 （使用 6S 1300mAh 电池）

重量：290g(不带电池)

重量：485g(带 6S 1300mAh 电池)

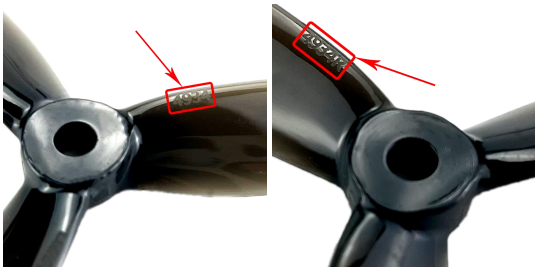
重量：632g(带 6S 1300mAh 电池 + GoPro8)

水面最大起飞重量：720g

使用说明

DarwinFPV HULK 采用了倒推设计，安装螺旋桨时一定要注意螺旋桨的安装方式！

第一步：将四个螺旋桨上有字的一面朝上放置，如下图所示：

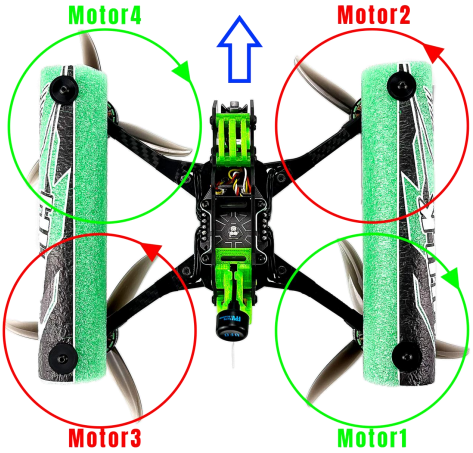


第二步：

将写有 4934 字样的两副螺旋桨分别安装在 2 号和 3 号电机上；

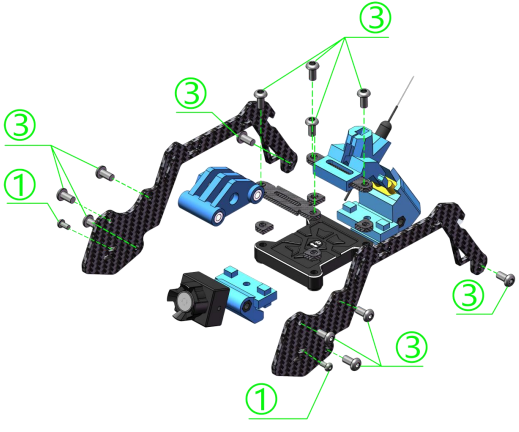
将写有 4934R 字样的两副螺旋桨分别安装在 1 号和 4 号电机上；

正确的螺旋桨安装方式，如下图所示：

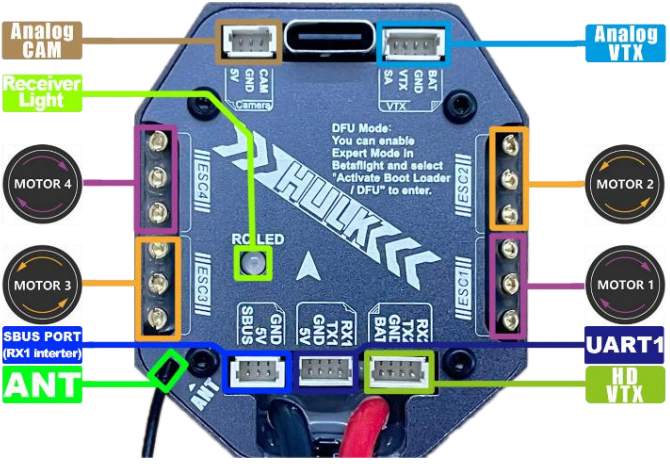


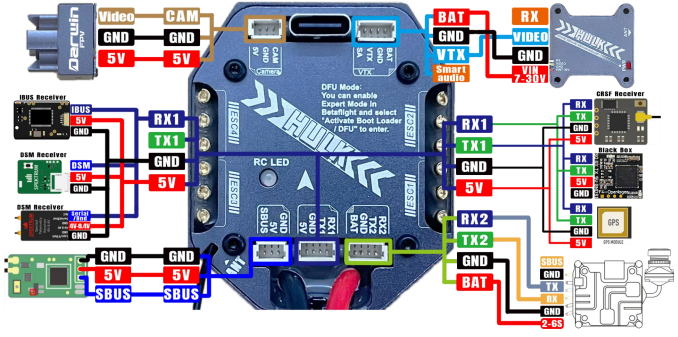
螺 丝 规 格

螺丝清单
① M2 x 4 摄像头螺丝 x 2
② M2 x 6 电机底座螺丝 x 12、AIO螺丝 x 4
③ M3 x 6 侧板螺丝 x 8、VTX螺丝 x 4
④ M3 x 9 底板螺丝 x 10



基本配置参数


Analog CAM
Receiver Light
MOTOR 4
MOTOR 3
SBUS PORT (RX1 interter)
ANT
Analog VTX
MOTOR 2
MOTOR 1
UART1
HD VTX
DFU Mode:
You can enable Expert Mode in Betaflight and select "Activate Boot Loader / DFU" to enter.
RC LED
ESC4
ESC3
ESC2
ESC1
Camera
VTX
ANT


Video
CAM
GND
5V
BAT
VTX
Smart audio
RX
VIDEO
VIN 7-30V
DFU Mode:
You can enable Expert Mode in Betaflight and select "Activate Boot Leader / DFU" to enter.
RC LED
RX1
TX1
RX2
TX2
SBUS
IBUS Receiver
DSM Receiver
CRSF Receiver
Black Box
GPS
2-6S

如何进入 DFU 模式

此 AIO 可通过两种方式进入 DFU 模式

①手动连接：点击连接，页面顶部开启专家模式，然后断开连接后重新连接，点击设置-激活启动引导程序/DFU，你现在已进入 DFU 模式（如果你是自动连接的，同手动连接步骤差不多，以 Betaflight 10.8.0 正式版示例）。

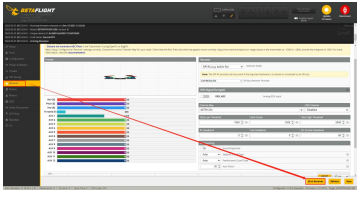
②将 AIO 连接到 Betaflight，在“CLI(命令行)”中输入“BL”（大小写均可）也可进入 DFU 模式。

对　频

将 AIO 接入电脑连接 Betafight，进入接收机配置页面，在页面右下角点击“接收机对频”，此时 AIO 的接收机绿色指示灯会从慢闪变成快闪，代表已进入接收机对频模式。

注意：对频成功后接收机指示灯会由快闪变为慢闪，表示对频成功，稍等片刻指示灯会变为常亮，代表连接成功，对频成功后接收机会记住对频信息，以后重启会自动连接，无需重新对频；

Betafight 4.3 固件仅支持 ELRS_V2.x 版本高频头。



指示灯状态	含义
绿灯常亮	连接成功
绿灯快闪	已进入对频模式
绿灯慢闪	无 TX 模块信号连接

包 装 清 单

1 x HULK Waterproof FPV Cinematic Drone
4 x Gemfan Sbang 4934-3 螺旋桨 (2 正+2 反)
2 x 电池扎带 20x230mm
1 x Battery TPU 缓冲座
1 x 备用线材包
1 x 备用螺丝包
1 x 24 合一螺丝盒
1 x M5 套筒
1 x 贴纸
1 x 说明书

更多有关 AIO 的固件、CLI、配置文件、最新的说明书等及更详细的配置教程，请到 DARWINFPV 官网支持下获取。

DARWINFPV 官网：https://www.darwinfpv.com

DARWIN HULK
USER MANUAL

Instagram: darwinfpv_official
Facebook: @DarwinFPV1
Email: support@darwinfpv.com
Manufacturer
Shenzhen DarwinFPV Electronic Co.,Ltd
5F, Bldg Meihua, Huawei Innovation Valley Songbai Rd, Shiyan St, Bao'an district, Shenzhen city, Guangdong province, China

DARWINFPV official website: https://www.darwinfpv.com

CAUTIONS

① Seawater is highly corrosive, it is not recommended for use in seawater. Please wash with fresh water immediately and then dry it once drone touched seawater.

② 2204.5-2450KV motor max supports 4S battery, 2204.5-1750KV motor max supports 6S battery, do not connect the positive and negative poles of the battery in reverse, will cause AIO damage.

③ After receiving the AIO, first connect to computer on Betaflight software to check whether the gyroscope and accelerometer are detected, and whether the gyroscope attitude is normal.

④ Increase the throttle in Betaflight software to ensure the normal rotation and correct rotation direction of the 4 motors, and then install the propellers to test flight; Be sure to remove the propellers when pulling the throttle in Betaflight software to avoid accidents.

⑤ Flying in a non-water environment, you can unscrew the screws and nylon hexagon standoffs, then remove the buoy device to reduce wind resistance.

After confirming the above precautions, you can install the propellers and start flying.

SUMMARY

DarwinFPV HULK is the world's only waterproof cinematic fpv drone, with IP67 waterproof rating and super electronic system protection armor, high-performance, ultra durable and maintenance-friendly, suitable for fpv photography needs in any harsh environment.

Features

For All-Weather: The electronic system is encapsulated by the silicone rubber seal and the aluminum alloy shell, with protection grade IP67, excellent waterproof and dustproof performance, easy to deal with various climatic conditions and harsh environments.

Smooth Flight: compact body design & reasonable center of gravity distribution make the flight smooth, stable and flexible, especially suitable for freestyle.

Stabilization/Anti-Shake: There are multiple shock absorption structures in the drone frame, and the video image will not shake when the action camera is recording.

Multiple Functions: 6S-45A F4 AIO, built-in ELRS 2.4GHz receiver, with a variety of plug-and-play interfaces with short circuit protection to meet different user needs.

Ultra Durable: HULK waterproof motor adopts top grade stainless steel bearing, excellent rust resistance, 2000h+ motor service life.

Strong Signal: Ingenious buoy device design enables HULK automatic auto-flip in the water, antenna is always above water to maintain good signal strength.

Maintenance-Friendly: Adopt a new appearance, modular design - easy maintenance, compact structure - weight is only 290g.

Specifications

Brand: DarwinFPV

Model: HULK Waterproof Cinematic FPV Drone

（Analog Version/HD Version）

Frame Structure: Squashed-X

Wheelbase: 220mm

Dimension: 224mm x 163mm x 60mm (Without Propeller)

Flight Controller: F411　MPU6500　2x Uarts(1,2）1x Softserial

ESC: BlueJay 3-6S 45A

Receiver Version: Built-in SPI ExpressLRS 2.4GHz Receiver

Camera and VTX Option:

Analog Version：HULK Waterproof CAM+HULK 600mW VTX

HD Digital Version：Walksnail Avatar HD Digital Kit

Motor:

HULK 2204.5-1750KV (6S Version)

HULK 2204.5-2450KV (4S Version)

Propeller: Gemfan Sbang 4934-3

Recommend Battery:

LiPo 6S 1300mAh (6S Version)

LiPo 4S 1500mAh (4S Version)

Flight Time: 7min~10min (6S 1300mAh Battery)

Weight: 290g (Without Battery)

Weight: 485g (With 6S 1300mAh Lipo Battery)

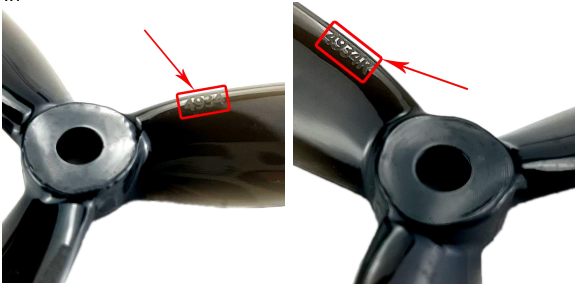
Weight: 632g (With 6S 1300mAh Lipo Battery + GoPro8)

Max Takeoff Weight Over Water: 720g

Propeller Installation

HULK propulsion system adopts pushback design, please follow the instructions when installing the propellers.

Step 1 Place the 4 propellers with the words facing up, as shown in the figure below:

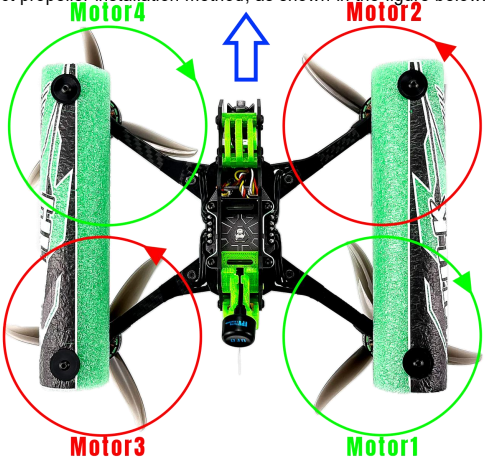


Step 2

Install the 2 propellers with the words 4934 on the No. 2 and No. 3 motors respectively;

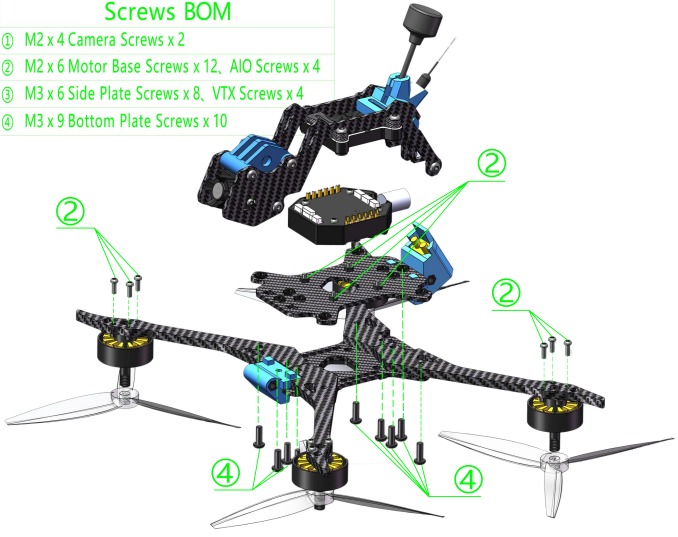
Install the 2 propellers with the words 4934R on the No. 1 and No. 4 motors respectively;

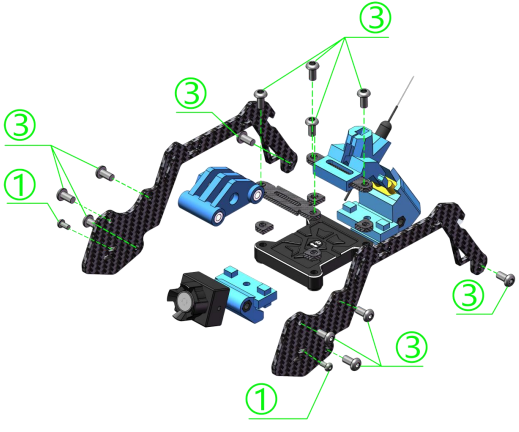
The correct propeller installation method, as shown in the figure below:



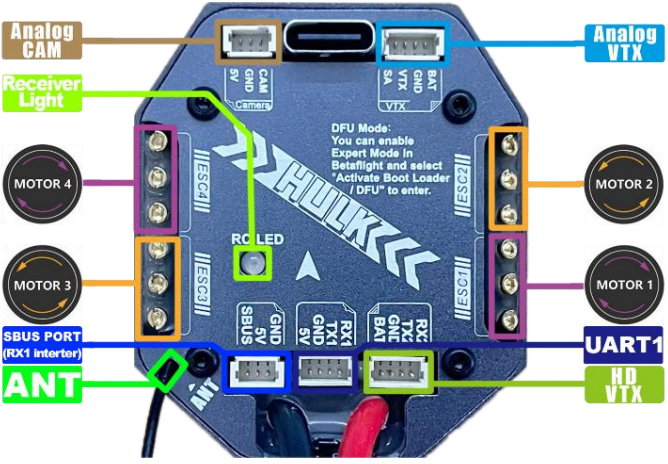
SCREWS BOM

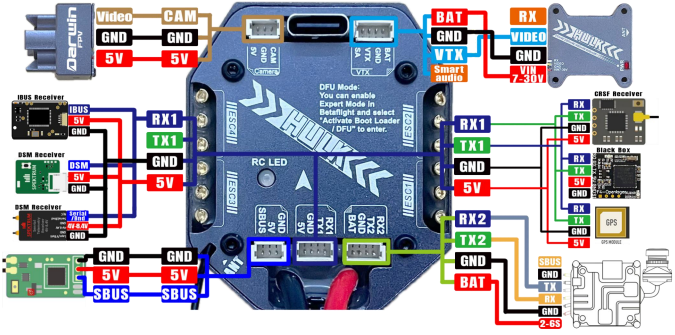
Screws BOM
① M2 x 4 Camera Screws x 2
② M2 x 6 Motor Base Screws x 12、AIO Screws x 4
③ M3 x 6 Side Plate Screws x 8、VTX Screws x 4
④ M3 x 9 Bottom Plate Screws x 10





SPECIFICATIONS

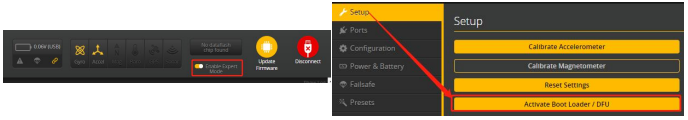




How to enter DFU Mode

AIO can enter DFU Mode in two ways:

1. Connect to computer by USB-C cable, open the Betafight software and click “connect” button, turn on “Expert Mode” at the top of the page, then disconnect and reconnect, click Setup menu - Activate Boot Loader/DFU menu, you are now in DFU Mode. (If you are automatically connected, the steps are similar to manual connection, example with Betaflight 10.8.0).



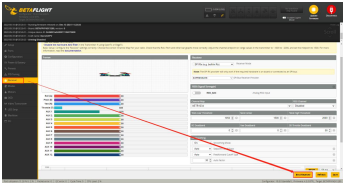
② Connect to computer by USB-C cable, open the Betafight software and click connect button - CLI menu, entering "BL" in the menu bar can also enter DFU Mode (“BL”can be uppercase or lowercase).

PAIRING

Connect to computer by USB-C cable, open the Betafight software and click “connect” button, enter the receiver configure page, and click "Bind Receiver" button. At the same time, the green receiver led indicator (I.E. “RC LED”) will change from slow flashing to fast flashing, indicating that the receiver has entered pairing mode.

Reminder: After the pairing is successful, the led indicator will change from fast flashing to slow flashing, indicating that the pairing is successful, after a while, the indicator light will turn steady on, indicating that the connection is successful. After 1st pairing, the receiver will remember the pairing info. In the future, every time the drone is powered on, it will automatically connect & no need to rebind.

Betaflight 4.3 firmware only supports ELRS_V2.x TX Module.



RC LED Status	Receiver Mode
Green Light Stays On	Paired
Green Light Fast Flashing	In Pairing Mode
Green Light Slow Flashing	Not Paired

In The Box

1 x HULK Waterproof FPV Cinematic Drone
4 x Gemfan Sbang 4934-3 propeller (2L2R)
2 x battery strap 20x230mm
1 x Battery Bottom Buffer Seat
1 x Spare Wire Pack
1 x Spare Screw Kit
1 x 24-in-1 Multifunctional Screwdriver Kit
1 x M5 Socket Wrench (for motor nut)
1 x Sticker
1 x Manual

For more information about AIO firmware, CLI, configuration files, the latest manuals etc., and more detailed configuration tutorials, please refer to DarwinFPV official website support menu.

DARWINFPV official website: https://www.darwinfpv.com

AFTER-SALES SERVICE

About Refunds: New/unopened/unused products purchased directly from DarwinFPV can be returned unconditionally within 20 workdays, and the customer is responsible for the return shipping cost. If the returned product is lost or opened for use, damaged or missing accessories, it will not be unconditional Refund.

About Warranty: If DarwinFPV determines that the problem is not covered by warranty, we will provide a discount for ordering new product replacement, and do not support free replacement.

Cases not supported by warranty:
1. Drone crash or fire damage due to user operation error.
2. Damage caused by incorrect soldering, improper installation and use.
3. Damage caused by unauthorized modification of circuit and mismatch of battery and charger.
4. Damage due to component aging or drone collision.
5. Drone malfunctions due to ingress of seawater.

CONTACT

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