ASCENT Lite+

Quick Start Guide



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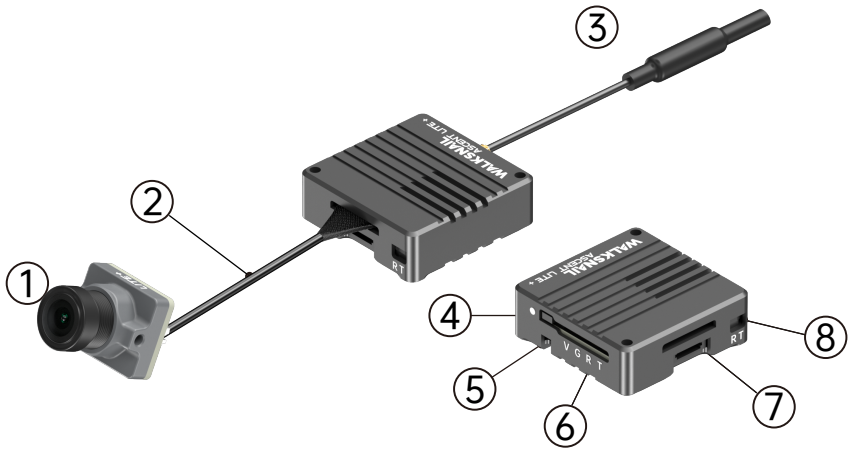
Product Usage Precautions

To deliver an optimal user experience and guarantee stable, safe operation of the device, we recommend that you thoroughly read the following provisions prior to initial use:

1. Complete all antenna installation before powering on the device to prevent damage to internal components.
2. Transmit power is limited to 10 mW when standby mode is enabled. Unlock the flight controller or turn off standby mode before the aircraft takes off.
3. If this unit operates simultaneously with other 5.8 GHz devices, select different channels for each device.
4. When enabling the camera gyro stabilization function, apply shock absorption treatment to the camera mounting platform to avoid stabilization failure.
5. The camera supports integrated synchronized audio and video recording without external recording equipment.
6. Audio recording is not supported under 1080P 100FPS and 120FPS modes.

Introduction

Walksnail Ascent Lite+ is a lightweight digital FPV VTX integrating high-definition video and real-time audio transmission. It features a mini 22×22 mm body with the VTX weighing only 2.75 g, equipped with 500 mW transmit power, delivering a maximum transmission distance of 8 km under ideal conditions and an average low latency of 35 ms. It supports up to 1080P 120FPS high-frame-rate footage and a 147°ultra-wide-angle lens, with a built-in MIC for synchronized audio recording. It features automatic frequency hopping, AES-256 encryption for anti-cross-interference, and head tracking expansion capability. The 6-pin connector is compatible with mainstream flight control systems including Betaflight and INAV. Its thermally conductive metal body ensures stable durability, and it fits micro drones, racing drones, and fixed-wing aircraft of all types.



1.Camera	4.Link Button	7.USB Port
2.Coaxial Cable	5.LED Indicator	8.Gimbal Port
3.Antenna	6.Power Pad	

*This product is a visible-light camera.

Connection



Red: Power in 3V~12.6V
Black: Power GND
White: Uart RX(Connects to Flight Controller TX)
Gray: Uart TX(Connects to Flight Controller RX)

Blue: USB-DP
Yellow: USB-DN
Black: USB-GND
Red: USB-5V

item list

1.Ascent Lite+ x1	5.TM2x4 Screws x4
2.Instruction Manual x1	6.TM2x6 Screws x4
3.6Pin5 Upgrade Cable x1	7.45mm Screwdriver x1
4.Screw Washer x4	8. Nano Gel Double-Sided Tape x1

Operation Guide

Follow the steps below in sequence to guarantee proper device operation:

Power Connection

1. Connect the 4-pin signal cable of the VTX to the designated UART port on the flight controller via soldering or plug-in connection.
2. Connect the red wire to the 5V output pin of the flight controller.
3. Connect the black wire to the GND pin of the flight controller. Cross-connect TX and RX: VTX TX → Flight Controller RX, VTX RX → Flight Controller TX.

Binding

Binding operation is required for new units on first use. Automatic connection will activate on subsequent power-on after successful binding.

1. Power on both the VTX transmitter and FPV goggles.
2. Wait for device startup completion; the VTX indicator flashes green, and a device status icon appears on the goggles screen.
3. Press the bind buttons on both the VTX and goggles simultaneously (see diagram). The device enters pairing mode: the VTX indicator turns red, and the goggles buzzer emits intermittent beeps.
4. Upon successful pairing, the VTX indicator turns solid green, the goggles' buzzer stops beeping, and real-time video feed displays normally on the screen.

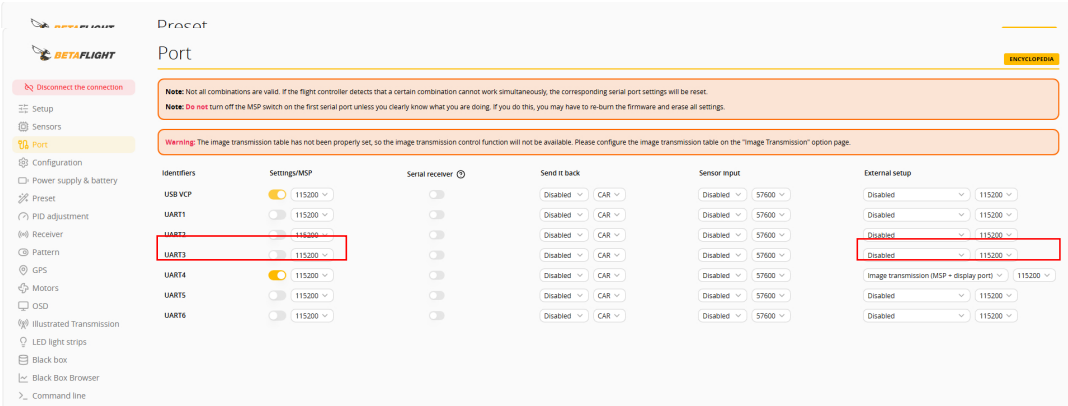




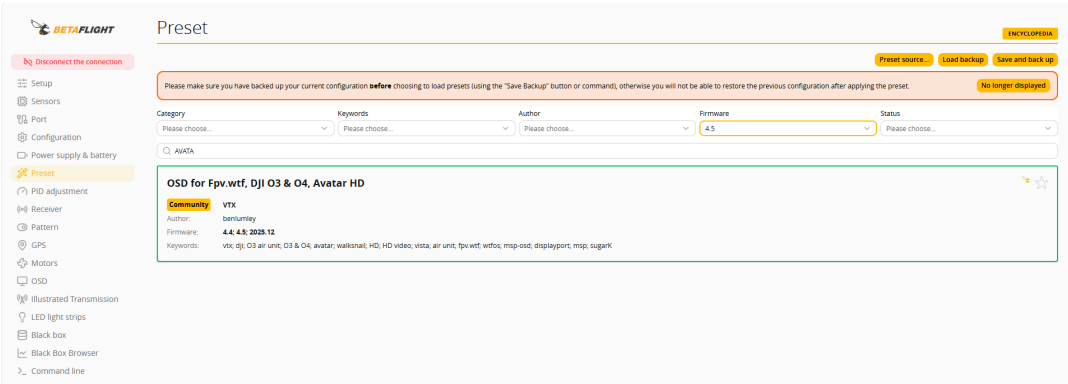
OSD Flight Information Configuration

Connect the VTX serial port to the flight controller to receive flight controller OSD data and display it on screen. The following steps use Betaflight Configurator 10.10.0 and flight controller firmware 4.5.0 as examples to introduce serial port configuration:

1. Solder the blue and green wires of the 6Pin5 power cable to flight controller UART1 port (refer to wiring diagram; this operation takes UART4 as an example).
2. Connect the flight controller to Betaflight Configurator with a data cable, enter the Ports tab, select the corresponding UART port, enable MSP function, and set peripheral to [VTX (MSP + Displayport)].



3. Switch to the Presets tab, search for "Avatar osd" or "HD osd", and select the corresponding preset profile.



4. Enter the OSD tab to customize flight data items displayed on screen as needed.

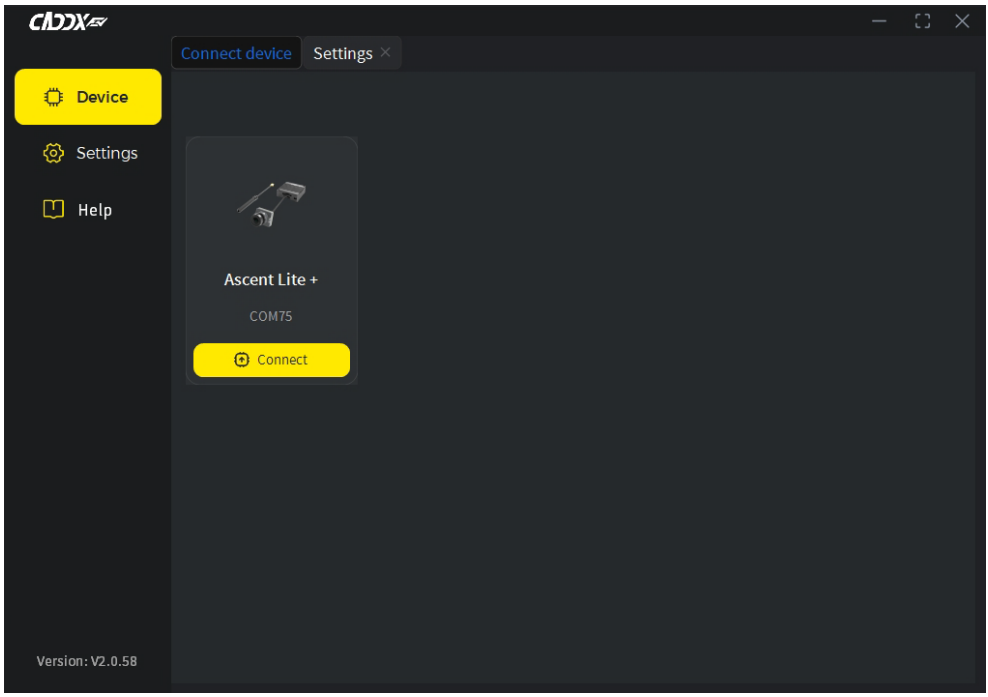
For flight controller firmware Betaflight 4.4, complete configuration per the steps below:

1. Enter the Ports tab, select the corresponding UART port, enable MSP function, and set peripheral to [VTX (MSP + DisplayPort)].
2. Open the CLI command window and input & execute the following commands.

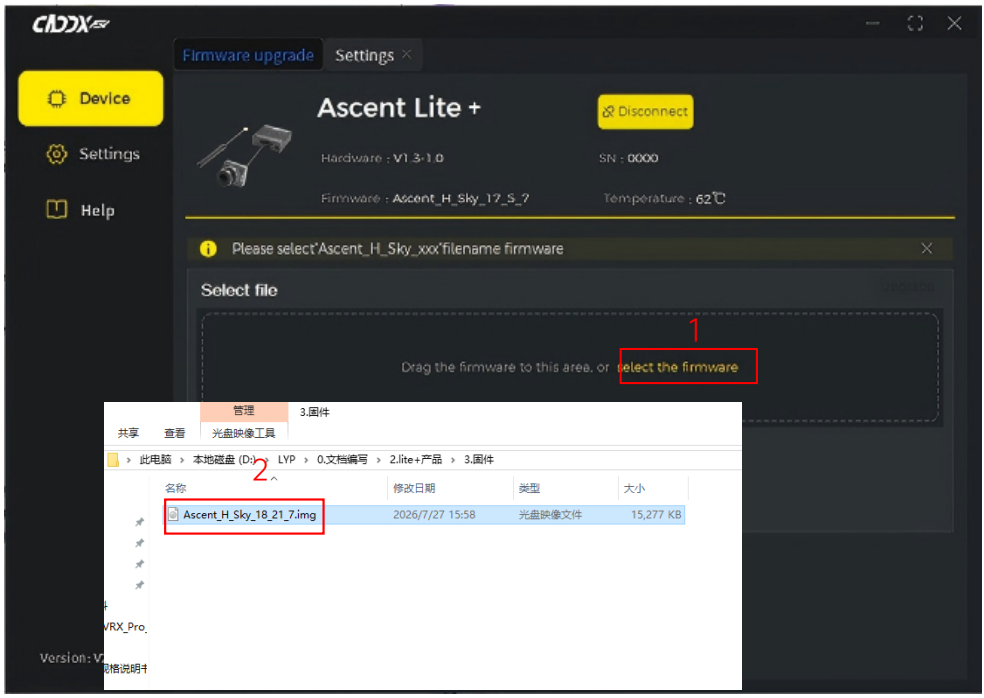
"set osd_displayport_device = MSP"
"set vcd_video_system = HD"
"save"

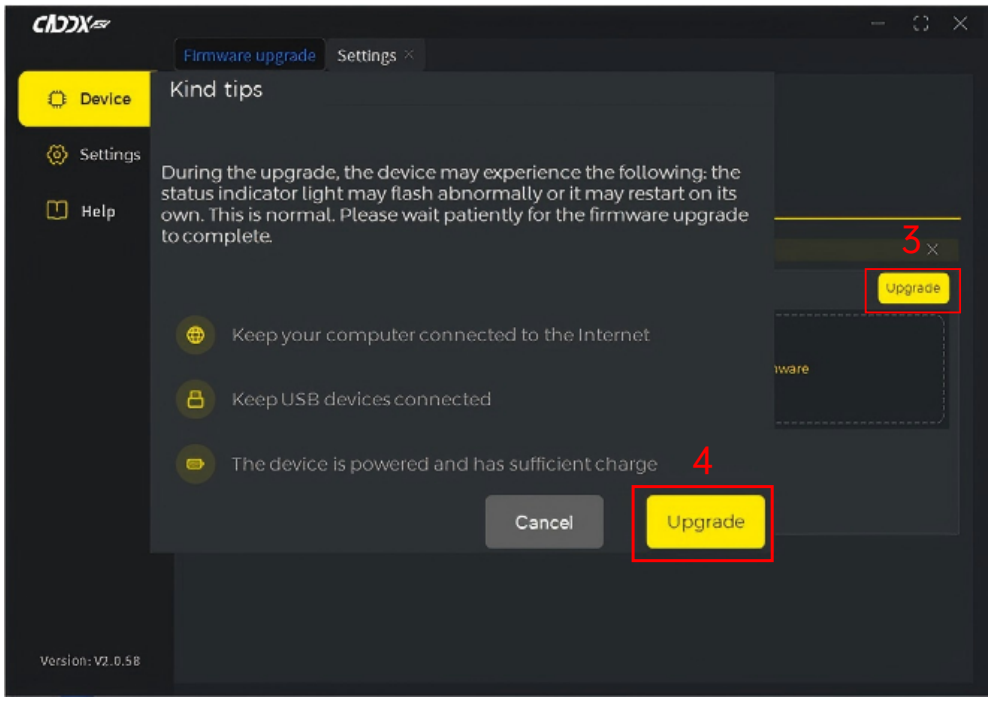
Firmware Upgrade

1. Download the latest matching firmware version from the official website (https://www.caddxfpv.com.cn/).
2. Connect the VTX to a computer via USB data cable, and maintain power to the VTX.
3. Launch the upgrade software (Caddx_PC_Tool); the software will automatically recognize the connected VTX device.

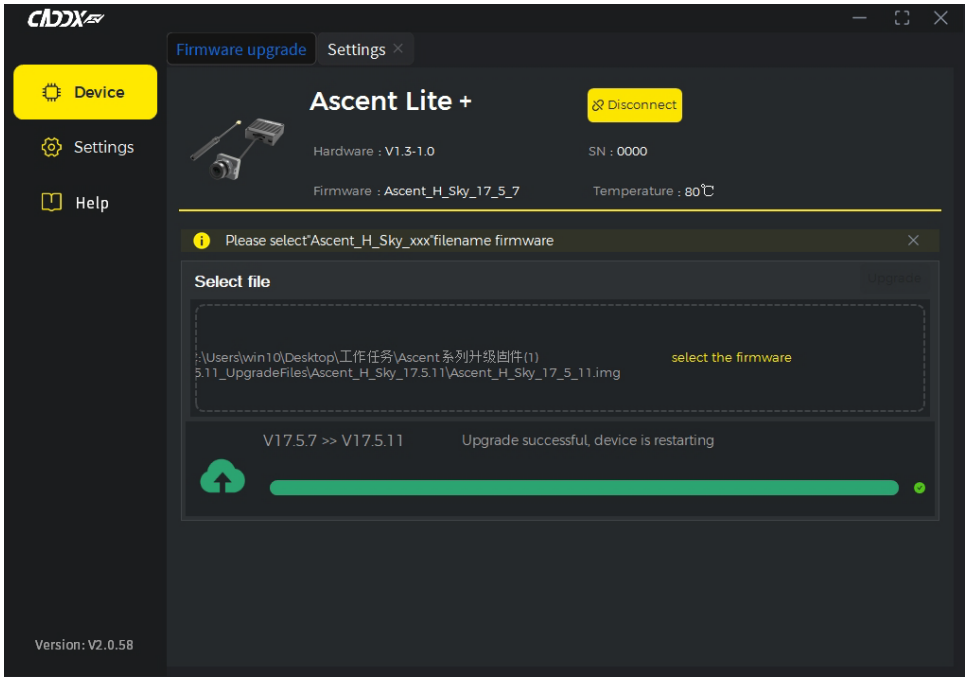


4. Select the downloaded firmware file within the software interface, then click the "page" button to initiate flashing.





5. Wait for the progress bar to complete fully; disconnect the USB and power supply only after the software displays an upgrade success notification.



Important Reminder: Do not cut power or unplug the USB cable during the entire upgrade process. Interrupted upgrade will permanently damage the device.

Status indication

VTX Indicator Status	
Link state	Steady red light
Upgrade firmware	Red light rapidly flashes
Wireless connection, image output is normal	Steady green light
Wireless not connected	green light rapidly flashes
Wireless connection is normal, image is abnormal	green light slowly flashes

Specifications

Name	Ascent Lite+ VTX
Model	WN13-7007B
FCC IC	2BHG9-WN13-7007B
Communication Frequency	5.725-5.829 GHz
Transmitter Power(EIRP)	FCC/SRRC:≤27dBm; CE:<14dBm

I/O Interface	JST1.0*4 (Power cord); HSG0.8*5 (USB)
Channels	3
Wide Voltage Input	3V ~ 12.6V
Supported FC Systems	Betaflight; Inav; Fettec; Kiss; ArduPilot
Bitrate	MAX 25mbps
OSD	Canvas mode
MIC Recording	Support
End-to-End Latency	Average latency35ms
Antenna	1 (Ipex-1)
Operating Bandwidth	5M/10M/20M/Auto
Image Sensor	1/2.8 inch
Resolution	1080P/120fps,1080P/100fps, 1080P/60fps,720P/120fps, 720P/100fps, 720P/ 60fps
Ratio	16/ 9
MIC	Lens Built-in Mic
Mounting Hole	20*20mm(M2)
Weight	10.5g
Dimensions	Camera: 12*14*15.8mm VTX: 23.5*23.5*8mm
Transmission Distance	8KM
Control Mode	One aircraft, one controller

For latest firmware downloads, tutorial videos, troubleshooting guides, or customer service inquiries, utilize the official support channels listed below.
Official Website: https://www.caddxfpv.com.cn/
Official WeChat Official Account QR Code:

ASCENT Lite+

快速入门指南



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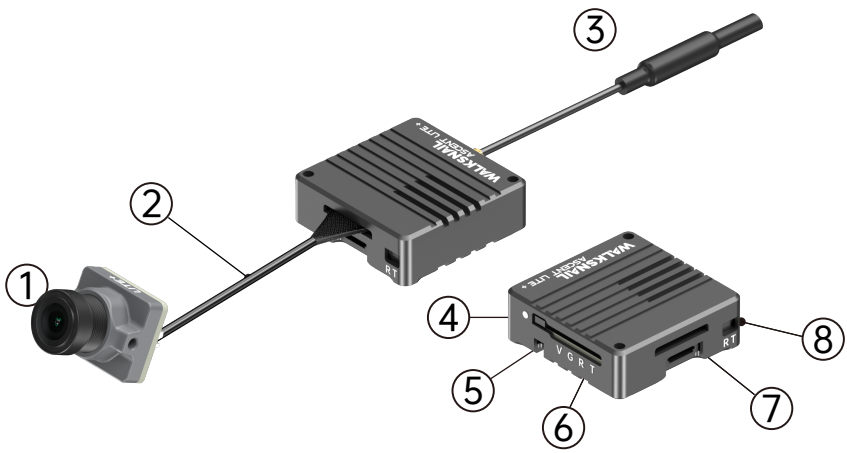
产品使用注意事项

为了让您获得最佳的使用体验，并确保设备安全运行，我们建议您在首次使用前仔细阅读以下事项。

1. 设备通电前，请完成全部天线安装，防止内部元器件受损。
2. 待机模式启用时，发射功率限制为 10mW；飞行器起飞前，请解锁飞控或关闭待机模式。
3. 若本机与其他 5.8GHz 设备同时工作，请选用互不相同的信道。
4. 启用相机陀螺仪防抖功能时，请对相机安装平台做好减震处理，防止防抖功能失效。
5. 相机支持音频、视频同步一体化录制，无需外接录音设备。
6. 分辨率 1080P、帧率 100FPS 与 120FPS 模式下，不支持音频录制。

简介

Walksnail Ascent Lite+集高清视频与实时音频传输为一体的轻量化数字 FPV 图传，22×22mm 迷你机身，VTX 仅 2.75g，搭载 500mW 发射功率，理想环境最远传输 8 公里，平均35ms低延迟，支持1080P、最高 120FPS 高帧率画面与 147° 超广角镜头，内置MIC可同步收音；具备自动跳频、AES-256 加密防串频、头部追踪拓展功能，6Pin 接头适配 Betaflight、INAV 等主流飞控系统，金属导热机身稳定耐用，适配微型机、竞速机、固定翼各类飞行器。



1.相机	4.对频按键	7.USB接口
2.同轴线	5.指示灯	8.云台串口
3.天线	6..电源焊盘	

*此产品为可见光摄像头

接线



红色： Power in 3V~12.6V
黑色：Power GND
白色： Uart RX (连接飞控 TX)
灰色：Uart TX (连接飞控 RX)

蓝色：USB-DP
黄色：USB-DN
黑色： USB-GND
红色：USB-5V

物品清单

1.Ascent Lite+ 图传套装 x1	5. TM2x4 螺丝x4
2.使用说明书 x1	6. TM2x6 螺丝x4
3.6Pin5 升级线 x1	7. 45mm 螺丝刀 x1
4. 螺丝垫片x1	8. 纳米双面胶 x1

操作指南

（为确保设备正常使用，建议按以下步骤依次操作）

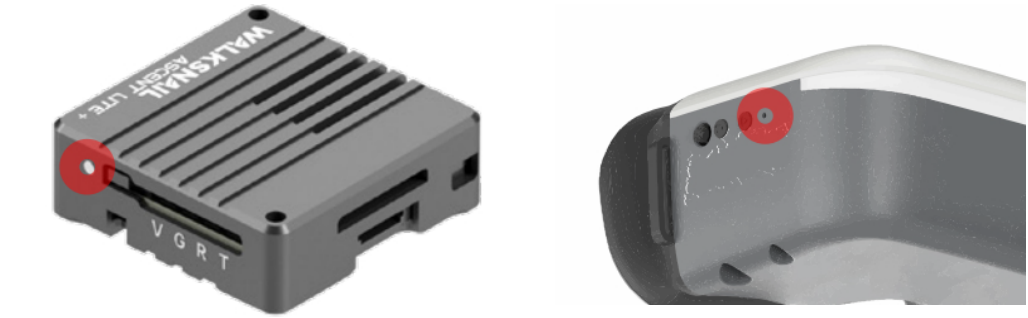
连接电源

1. 将 VTX 的 4Pin 信号线通过焊接或插接方式连接至飞控指定 UART 串口。
2. 红线接入飞控 5V 输出端。
3. 黑线连接飞控 GND 接地引脚。TX / RX 交叉连接（VTX TX → 飞控 RX，VTX RX → 飞控 TX）。

对频

新机首次使用需执行对频操作，对频成功后再次开机可自动连接。

1. 接通 VTX 发射端与 FPV 眼镜供电电源。
2. 等待设备完成启动，VTX 指示灯绿色闪烁，眼镜界面显示设备状态图标。
3. 同步按下 VTX 与眼镜端的对频按键（详见图示）；设备进入配对模式后，VTX 指示灯切换为红色，眼镜蜂鸣器发出间断提示音。
4. 配对成功时，VTX 指示灯转为绿色常亮，眼镜蜂鸣器停止鸣响，屏幕正常输出实时图传画面。



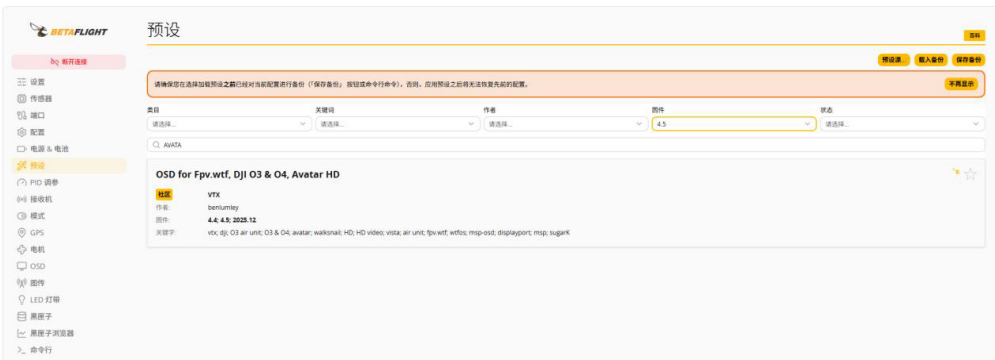
OSD飞行信息设置

将图传串口连接至飞控，即可接收飞控 OSD 信息并在画面显示。下文以 Betaflight-configurator 10.10.0、飞控固件 4.5.0 为例，介绍串口配置操作步骤：

1. 将 6pin5电源线的蓝线、绿线焊接至飞控 UART1 端口（接线方式参考接线示意图，本操作以 UART4 为例）。
2. 使用数据线连接飞控与 Betaflight-configurator，进入端口设置界面，选中对应 UART 端口，启用 MSP 功能，外设选择【图传（MSP+显示窗口）】。



3. 切换至预设页面，检索 “Avatar osd” 或 “HD osd”，选中对应预设方案



4. 进入 OSD 设置页面，按需配置画面上展示的飞行信息项目。

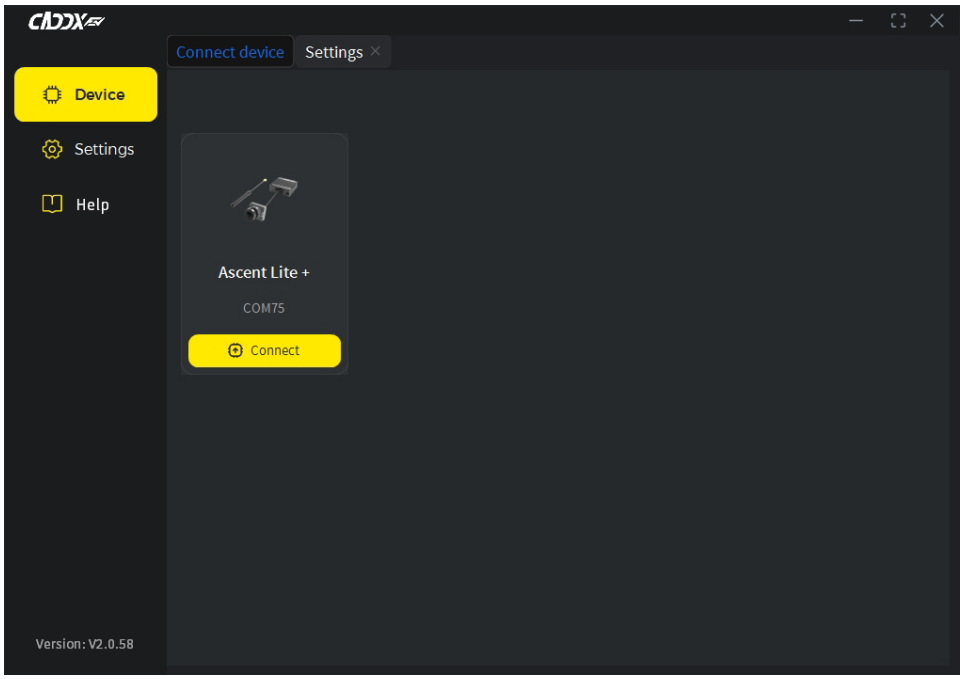
若您使用 Betaflight 4.4 版本飞控固件，请按以下方式完成配置：

1. 进入端口设置界面，选中对应 UART 端口，启用 MSP 功能，外设选择【图传（MSP+显示窗口）】。
2. 打开 CLI 命令行窗口，输入下文红色标注指令并执行。

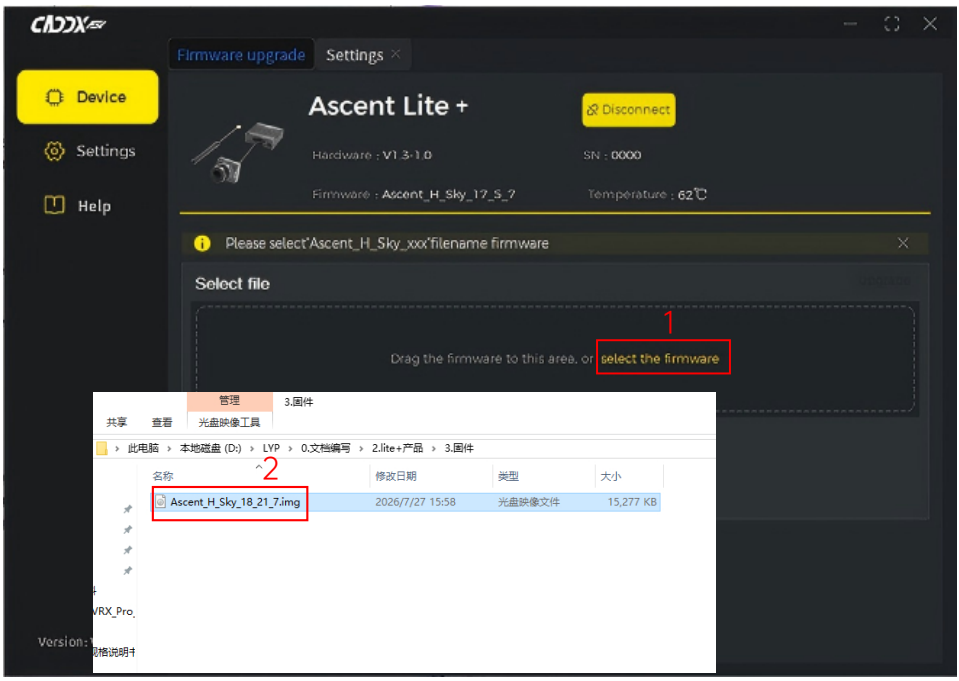
"set osd_displayport_device = MSP"
"set vcd_video_system = HD"
"save"

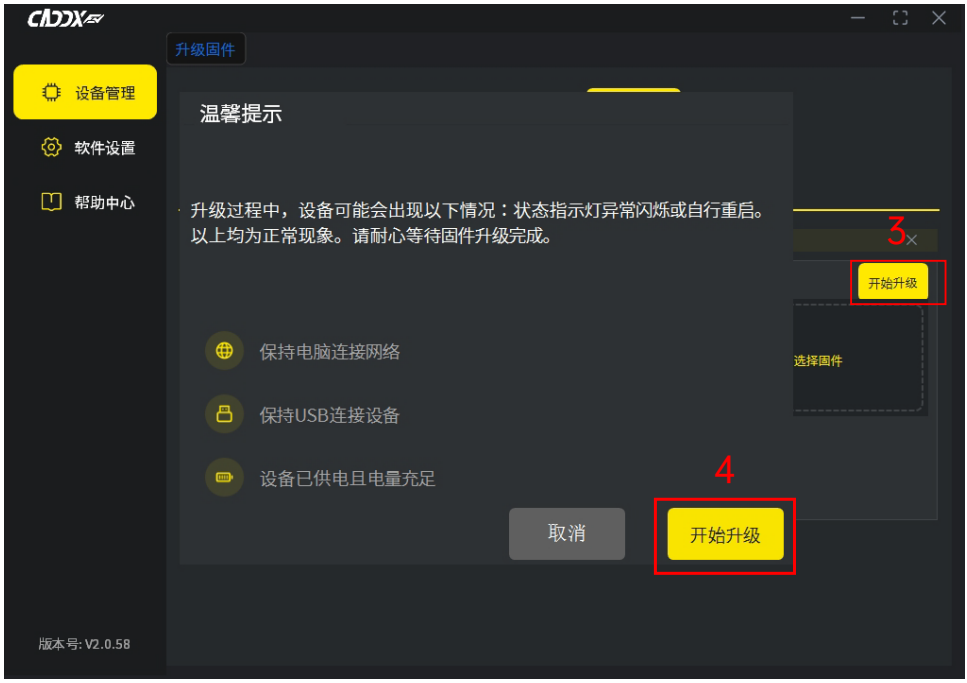
固件升级

1. 前往官方渠道（https://www.caddxfpv.com.cn/）下载对应版本最新固件。
2. 使用 USB数据线将 VTX接收机与电脑相连接，接通 VTX供电。
3. 打开升级软件（Caddx_PC_Tool），软件会自动识别已连接的 VTX设备。

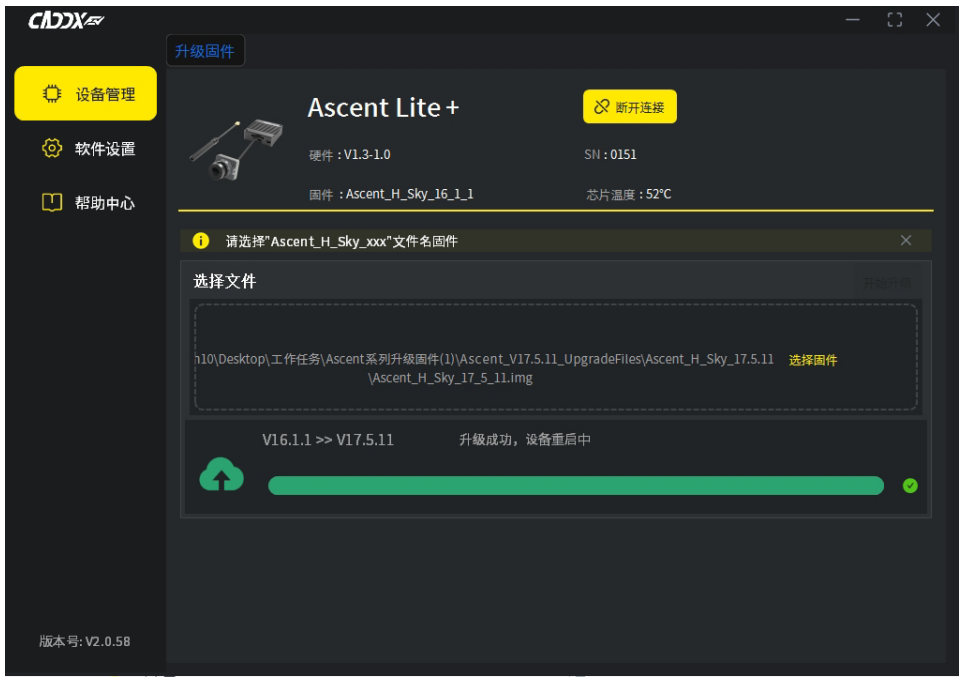


4. 在软件界面选中已下载好的固件文件，点击升级按钮开始刷写程序。





5. 等待进度条走完，软件提示升级成功后，再断开 USB 与电源。



重要提醒：升级全程不可断开电源、拔除数据线，中断升级将造成设备损坏

工作状态指示

VTX指示灯状态	
对频状态	红灯常亮
升级固件	红灯快速闪烁
无线连接，图像输出正常	绿灯常亮
无线未连接	绿灯快速闪烁
无线连接正常	绿灯慢闪

规格参数

名称	Ascent Lite+ VTX
型号	WN13-7007B
FCC IC	2BHG9-WN13-7007B
通信频率	5.725-5.829 GHz
发射功率（EIRP）	FCC/SRRC:≤27dBm; CE:<14dBm
接口	JST1.0*4 （电源线）; HSG0.8*5 (USB)
频点数量	3
宽电压输入	3V ~ 12.6V
支持飞控频率	Betaflight; Inav; Fettec; Kiss; ArduPilot
比特率	MAX 25mbps
OSD	Canvas mode
MIC录制	支持
端到端延时	平均延时35ms
天线	1 (Ipex-1)
工作宽带	5M/10M/20M/Auto
图像传感器	1/2.8 inch
分辨率	1080P/120fps,1080P/100fps, 1080P/60fps,720P/120fps, 720P/100fps, 720P/ 60fps
比例	16/ 9

MIC	镜头内置MIC
安装孔距	20*20mm(M2)
重量	10.5g
尺寸	Camera: 12*14*15.8mm VTX: 23.5*23.5*8mm
传输距离	8KM
控制能力	一机一控

如您在使用过程中遇到任何问题，欢迎通过以下渠道获取最新固件、教学视频和常见问题解答，或联系我们的客服团队获取支持。
官方网站：https://www.caddxfpv.com.cn/
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