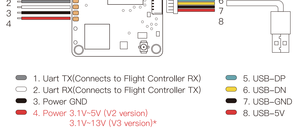
Avatar HD Nano V3

QUICKSTART GUIDE

V1.2

Connection



1. Uart TX(Connects to Flight Controller RX)
2. Uart RX(Connects to Flight Controller TX)
3. Power GND
4. Power 3.1V~5V (V2 version)
   3.1V~13V (V3 version)*
5. USB-DP
6. USB-DN
7. USB-GND
8. USB-5V

*It is recommended that the V3 version be powered by 1S~3S batteries, and the BEC power supply must ensure sufficient power supply
Power: 5V@1.5A (80℃); 12V@0.7A (80℃)

Linking

1. Connect the VTX and the power of the goggles.
2. Wait for the VTX to initialize and the green light flashes, and the status icon appears on the goggles.
3. Press the link button of the VTX and goggles respectively (as shown in the picture), when the VTX enters the pairing state The indicator light turns red, and the goggles end is a DI... DI... DI...
4. After the link is successful, the indicator light on the VTX turns solid green, the beeping sound on the goggles stops and the screen is displayed.

Upgrade

Please go to the official website to download the upgrade firmware, Avatar_Sky_X.X.X.img is the VTX file, Avatar_Gnd_X.X.X.img is the goggles file, copy it to the VTX or SD card, be careful not to change the file name. You need to turn on the power to use the U disk function.

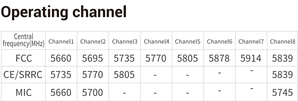
1. Copy the upgrade file to the root directory of the VTX and the goggles, connect to the power supply and wait for the device to initialize (delete the old firmware file first if there in one).
2. Press and hold the link button on the VTX and the goggles for 8 seconds, the indicator light flashes red when the VTX enters the upgrade state, and the goggles automatically restarts and emits a beep...beep...beeper sound. (Do not power off during the upgrade process, the upgrade time on the goggle is about 6 minutes)
3. After the upgrade is successful, the indicator light of the VTX turns green and flashes, and the beeping sound stops after the goggles beeps for 5 seconds.

When the VTX is stationary for a long time
please use a fan to assist cooling

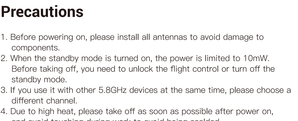
UART

The UART function enables the VTX communicate with the flight controller, allowing the VTX obtain the flight controller information. Take Betaflight Configurator as an example to introduce the UART setting method.

1. Solder the white and gray wires of the power cable to the flight controller (refer to the Connection page)



2. Connect the flight controller to the Betaflight Configurator, and open the corresponding UART port (Take UART1 as an example in the figure) Check the MSP switch and click Save.



3. Open the CLI command line and enter the content in red font
   "set osd_displayport_device = MSP"
   "set displayport_msp_serial = Y" (Where Y is one less than the number of the serial port. e.g. Y = 2 for serial 3)
   "save"

Betaflight 4.4 version settings:

1.Open the corresponding uart port (Take uart1 as an example in the figure) Check the MSP switch and click Save, Check the VTX (MSP+Displayport),

3. Open the CLI command line and enter the content in red font,
   "set osd_displayport_device = MSP"
   "set vcd_video_system = HD"
   "save"

Status indication

Goggles Buzzer Status	
Boot failure	DI.. DI..... DI.. DI.....
Link state	DI.... DI.... DI.... DI....
Upgrade firmware	DI..... DI..... DI..... DI——
Upgrade failed	DI.. DI.. DI.. DI..
VTX Indicator Status	
Link state or no firmware detected	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
Camera not detected	Green light slowly flashes
VTX overheating	Alternately flashing red and green lights

Operating channel

Central frequency(MHz)	Channel1	Channel2	Channel3	Channel4	Channel5	Channel6	Channel7	Channel8
FCC	5660	5695	5735	5770	5805	5878	5914	5839
CE/SRRC	5735	5770	5805	-	-	-	-	5839
MIC	5660	5700	-	-	-	-	-	5745

Make sure you fully understand and abide by local laws and regulations before using this product. An amateur radio license may be needed in FCC regions when using channels 1,2,6or 7, as they are amateur frequency bands. Users who use the amateur frequency bands with a modified or cracked version or without a license may be punished for breaking local laws or regulations.

Precautions

1. Before powering on, please install all antennas to avoid damage to components.
2. When the standby mode is turned on, the power is limited to 10mW. Before taking off, you need to unlock the flight control or turn off the standby mode.
3. If you use it with other 5.8GHz devices at the same time, please choose a different channel.
4. Due to high heat, please take off as soon as possible after power on, and avoid touching during work to avoid being scalded.

VTX Specification

Model	Avatar mini 1S module
Communication Frequency	5.725~5.850 GHz
Transmitter Power (EIRP)	FCC: <25.5dBm; CE: <14dBm; SRRC: <20dBm; MIC: <25dBm (V2 board); FCC: <27dBm; CE: <14dBm; SRRC: <20dBm; MIC: <25dBm (V3 board)
I/O Interface	JST1.0*4(Power in) HSG0.8*4(USB)
Mounting Holes	25.5*25.5 mm
Dimensions	30*30*6 mm
Storage	8 G/32 G
Recording	1080p/720p
Weight	6.8 g
Operating Temperature	-20~40℃
Channels	8
Wide Power Input	3.1V~5V (V2 board) 3.1V~13V (V3 board)
Supported FC System	Betaflight; Inav; Fettec; Kiss; ArduPilot
Bitrate	25mbps / 50mbps
OSD	Canvas mode
Latency	Average delay 22ms
Antenna	IPEX

Camera parameters

Model	Avatar nano
Image Sensor	1/2.7"Inch
Resolution	1080P/60fps, 720P/120fps, 720P/60fps
Ratio	16/9 4/3
Lens	2.1mm
FOV	170°
Aperture	F2.0
Shutter	Rolling shutter
Min.Illumination	0.001Lux
Weight	3.5g
Dimensions	14*14*17mm

CADDXFPV Support
email: support@caddxfpv.com

Avatar HD Nano V3

快速入门指南

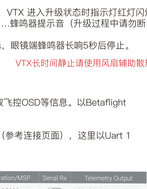
V1.2

接线

1. Uart TX(Connects to Flight Controller RX)
2. Uart RX(Connects to Flight Controller TX)
3. Power GND
4. Power 3.1V~5V (V2 版本)
   3.1V~13V (V3 版本)*
5. USB-DP
6. USB-DN
7. USB-GND
8. USB-5V

*建议V3版本使用1S~3S电池供电
使用BEC电源需确保供电充足
功耗: 5V@1.5A (80℃); 12V@0.7A (80℃)

对频



1. 连接 VTX 和眼镜电源。
2. 等待设备启机后，VTX 绿灯闪烁，护目镜上出现状态图标。
3. 分别按下 VTX 和眼镜的对频按钮（如图），当进入配对状态时， VTX 指示灯变为红色，眼镜端发出滴.. 滴.. 滴..蜂鸣器提示。
4. 对频成功后，VTX 上的指示灯变为绿色常亮，眼镜蜂鸣器停止并显示图传画面。

升级

请到官网下载最新升级固件，Avatar_Sky_X.X.X.img 对应VTX 端升级固件，Avatar_Gnd_X.X.X.img 对应眼镜端升级固件，分别拷贝到 VTX 与眼镜端 SD 卡中，注意请勿修改文件名，VTX 需要通电才可使用U盘功能。

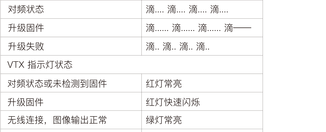
1. 将升级文件复制到 VTX 和眼镜端 SD 卡的根目录下，连接电源并等待设备启机（如果有，请先删除旧固件文件）。
2. 分别长按 VTX 和眼镜端的对频按钮 8 秒，VTX 进入升级状态时指示灯红灯闪烁，眼镜端自动重启后发出滴.....滴.....滴.....蜂鸣器提示音（升级过程中请勿断电，眼镜端升级时间大约为6分钟）
3. 升级成功后，VTX 指示灯变为绿色并闪烁，眼镜端蜂鸣器长响5秒后停止。

VTX长时间静止请使用风扇辅助散热

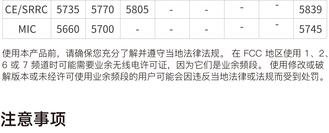
UART

UART功能可以使图传与飞控进行通信，获取飞控OSD等信息。以Betaflight Configurator为例介绍UART设置方法。

1.将电源线白线和灰线焊接到飞控Uart串口（参考连接页面），这里以Uart 1串口为例。



2. 将飞控连接到Betaflight Configurator，打开对应的UART接口，勾选MSP开关，点击保存。



3. 打开CLI命令行，输入红色字体内容，
   "set osd_displayport_device = MSP"
   "set displayport_msp_serial = Y" (其中 Y 比使用串口数小一位，
   例如 Y = 0 对应Uart 1，Y = 2 对应Uart 3以此类推)
   "save"

Betaflight 4.4 版本设置：

1.打开对应的UART接口，勾选MSP开关，勾选VTX (MSP+Displayport)。

3. 打开CLI命令行，输入红色字体内容，
   "set osd_displayport_device = MSP"
   "set vcd_video_system = HD"
   "save"

状态指示

眼镜端蜂鸣器状态	
启机失败	滴.. 滴..... 滴.. 滴.....
对频状态	滴.... 滴.... 滴.... 滴....
升级固件	滴..... 滴..... 滴..... 滴——
升级失败	滴.. 滴.. 滴.. 滴..
VTX 指示灯状态	
对频状态或未检测到固件	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
未检测到相机	绿灯慢闪
图传过热警告	红绿灯交替闪烁

工作频道

Central frequency(MHz)	Channel1	Channel2	Channel3	Channel4	Channel5	Channel6	Channel7	Channel8
FCC	5660	5695	5735	5770	5805	5878	5914	5839
CE/SRRC	5735	5770	5805	-	-	-	-	5839
MIC	5660	5700	-	-	-	-	-	5745

使用本产品前，请确保您充分了解并遵守当地法律法规。 在 FCC 地区使用 1、2、6 或 7 频道时可能需要业余无线电许可证，因为它们是业余频段。 使用修改或破解版本或未经许可使用业余频段的用户可能会因违反当地法律或法规而受到处罚。

注意事项

1、通电前请安装好所有天线，避免元器件损坏。
2、待机模式开启时功率受限10mW，起飞前需解锁飞控或关闭待机模式。
3、如果您同时与其他5.8GHz设备一起使用，请选择不同频道。
4、因发热量大，通电后请尽快起飞，工作中避免触摸以免烫伤。

VTX 规格

型号	Avatar mini 1S module
通信频率	5.725~5.850 GHz
发射功率 (EIRP)	FCC: <25.5dBm; CE: <14dBm; SRRC: <20dBm; MIC: <25dBm (V2 board); FCC: <27dBm; CE: <14dBm; SRRC: <20dBm; MIC: <25dBm (V3 board)
接口	JST1.0*4(电源线) HISG0.8*4(USB)
安装孔距	25.5*25.5 mm
外形尺寸	30*30*6 mm
内置存储	8 G/32 G
录制规格	1080p/720p
重量	6.8 g
工作环境温度	-20~40℃
频点数量	8
宽电源输入	3.1V~5V (V2 板) 3.1V~13V (V3 板)
支持飞控系统	Betaflight; Inav; Fettec; Kiss; ArduPilot
比特率	25mbps / 50mbps
OSD	Canvas mode
端到端延时	平均延时 22ms
天线	IPEX

相机规格

型号	Avatar nano
图像传感器	1/2.7"Inch
分辨率	1080P/60fps, 720P/120fps, 720P/60fps
比例	16/9 4/3
镜头	2.1mm
FOV	170°
光圈	F2.0
快门	卷帘快门
最低照度	0.001Lux
重量	3.5g
外形尺寸	14*14*17mm

CADDXFPV 技术支持
email: support@caddxfpv.com