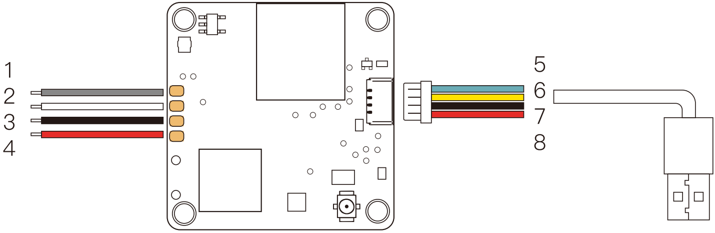
AVATAR MINI 1S KIT

(30mm board V2/V3)

QUICKSTART GUIDE

V1.2

Connection

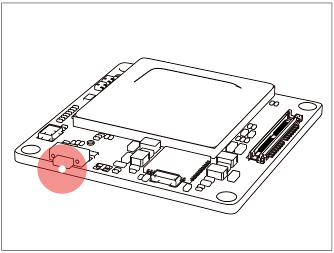


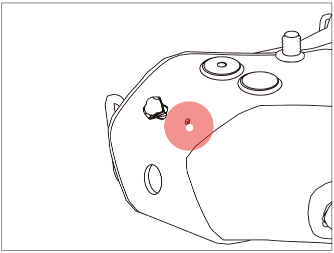
- ▨ 1. Uart TX(Connects to Flight Controller RX)
- ⬜ 2. Uart RX(Connects to Flight Controller TX)
- ⬛ 3. Power GND
- 🟥 4. Power 3.1V~5V (V2 version)
  3.1V~13V (V3 version)*

- 🟦 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.

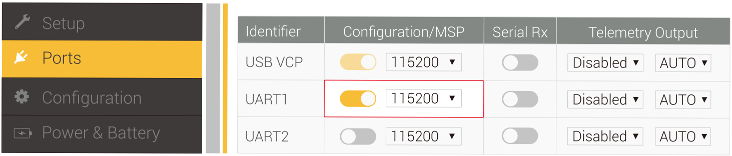
1. Copy the upgrade file to the root directory of the VTX and the goggles, connect to the power supply and wait for the device to initialize (delete the old firmware file first if there in one).
2. Press and hold the link button on the VTX and the goggles for 8 seconds, the indicator light flashes red 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

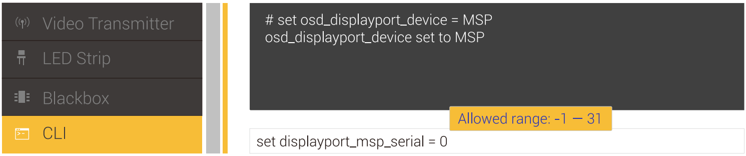
The UART function enables the VTX communicate with the flight controller, allowing the VTX obtain the flight controller information. Take Betaflight Configurator as an example to introduce the UART setting method.

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



Identifier	Configuration/MSP		Serial Rx	Telemetry Output	
USB VCP	●	115200 ▾	○	Disabled ▾	AUTO ▾
UART1	●	115200 ▾	○	Disabled ▾	AUTO ▾
UART2	○	115200 ▾	○	Disabled ▾	AUTO ▾

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.

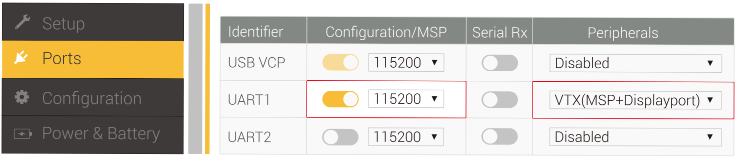


```
# set osd_displayport_device = MSP
osd_displayport_device set to MSP
```

```
set displayport_msp_serial = 0
```

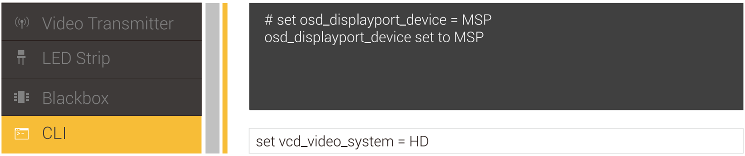
3. Open the CLI command line and enter the content in red font
“set osd_displayport_device = MSP”
“set displayport_msp_serial = Y” (Where Y is one less than the number of the serial port. e.g. Y = 2 for serial 3)
“save”

Betaflight 4.4 version settings:



Identifier	Configuration/MSP		Serial Rx	Peripherals
USB VCP	●	115200 ▾	○	Disabled ▾
UART1	●	115200 ▾	○	VTX(MSP+Displayport) ▾
UART2	○	115200 ▾	○	Disabled ▾

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)。



```
# set osd_displayport_device = MSP
osd_displayport_device set to MSP
```

```
set vcd_video_system = HD
```

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 lite camera
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	1.9g
Dimensions	14*14*16mm

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

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