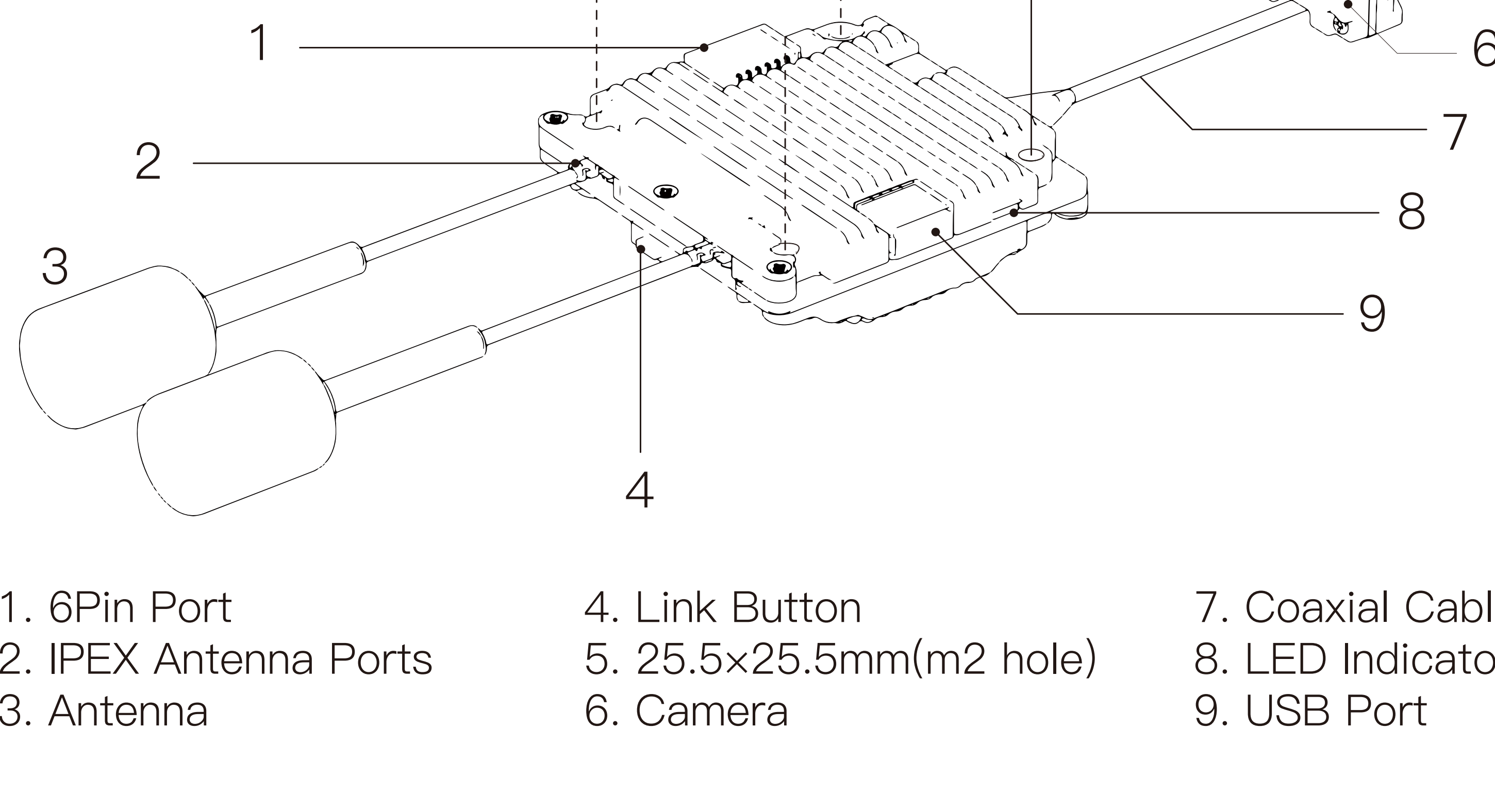


AVATAR KIT

QUICKSTART GUIDE

V1.1

Introduction

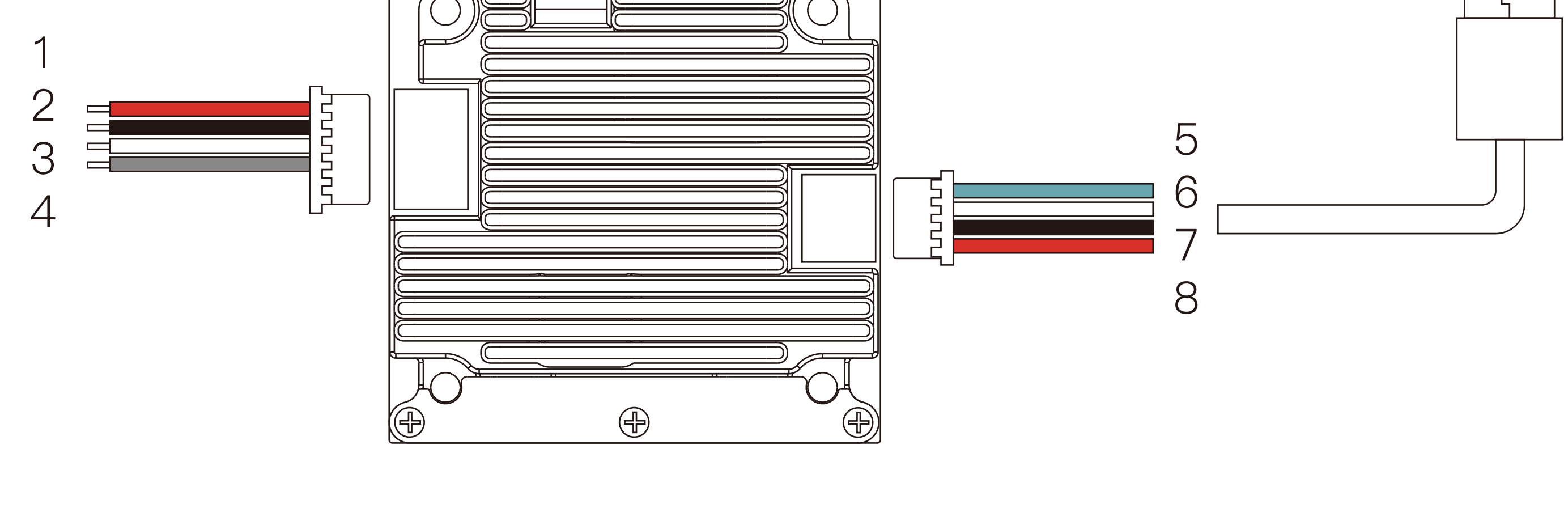


- 1. 6Pin Port
- 2. IPEX Antenna Ports
- 3. Antenna
- 4. Link Button
- 5. 25.5x25.5mm(m2 hole)
- 6. Camera
- 7. Coaxial Cable
- 8. LED Indicator
- 9. USB Port



Please install the antenna and coaxial cable before power on

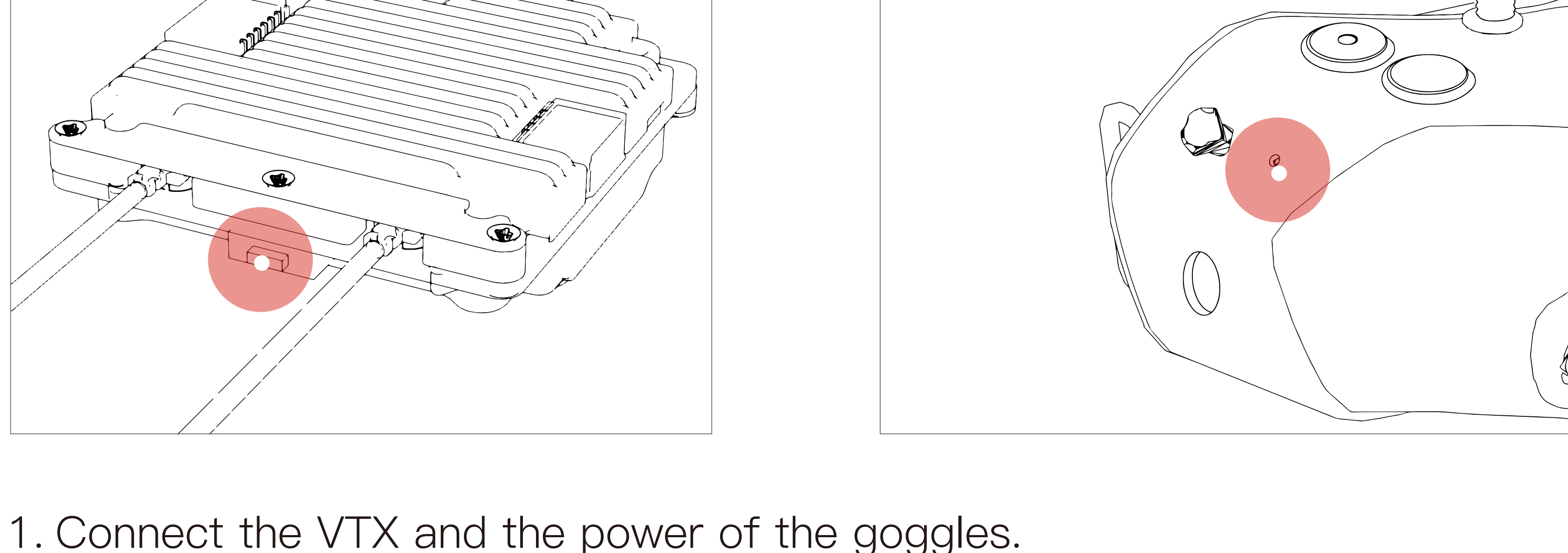
Connection



- 1. *Power 6V~25.2V
- 2. Power GND
- 3. Uart RX(Connects to Flight Controller TX)
- 4. Uart TX(Connects to Flight Controller RX)
- 5. USB-DP
- 6. USB-DM
- 7. USB-GND
- 8. USB-5V

* It is recommended to use a regulated power supply for power supply. If you use a 6S battery, be sure to install a capacitor at the battery input It is recommended to use the specifications above 50V/47uF, the voltage ripple is higher than 35V, and the risk of burning the device is high.

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 send 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

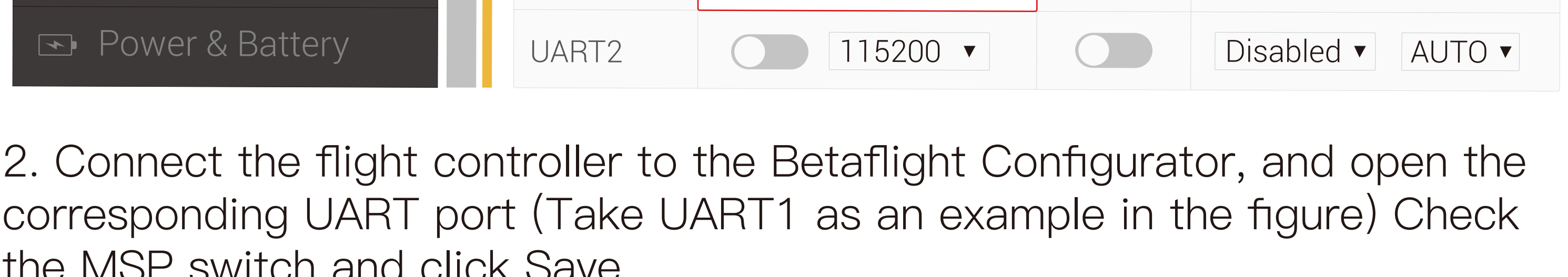
Please go to the official website to download the upgrade firmware, Avatar_Sky_X.X.X.img is the VTX file, Avatar_Gnd_X.X.X.img is the goggles file, copy it to the VTX or SD card, be careful not to change the file name. You need to turn on the power to use the U disk function.

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 is one).
2. Press the link button of the VTX and the goggles respectively for 8 seconds. When the VTX enters the upgrade status, the indicator turns on. It flashes red, and the goggles are beeping...DI... DI... DI... prompts sound (the upgrade time is long, please pay attention to the ambient temperature. do not cut off the power in the middle)
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.

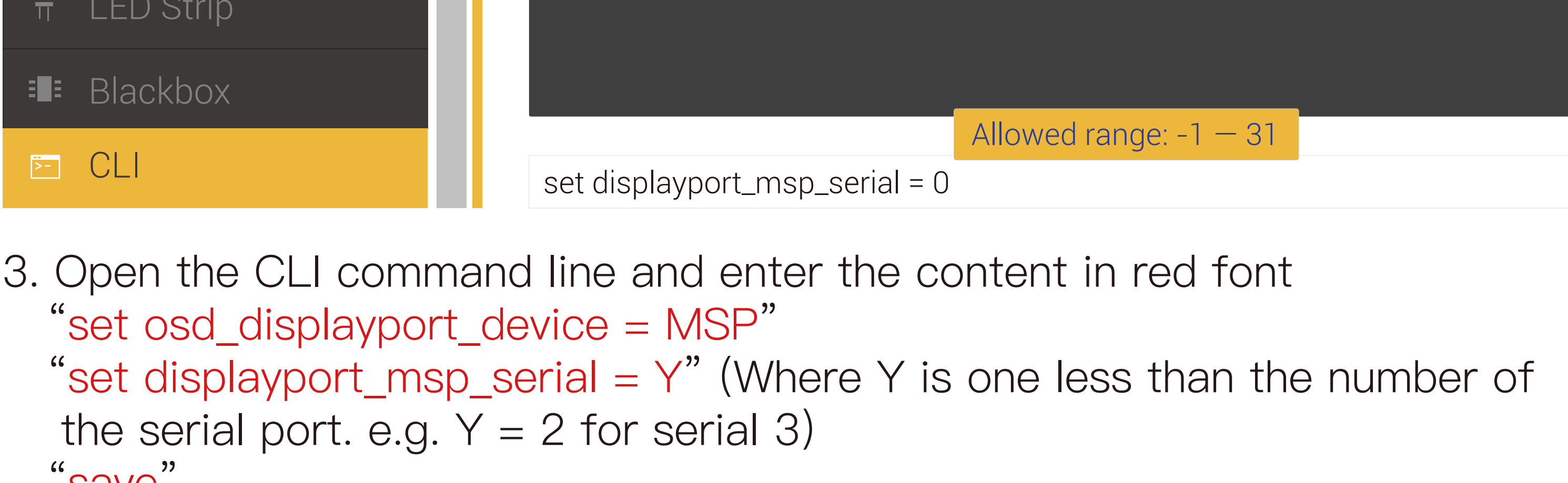
UART

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 6 pin 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"

Status indication

Goggles Buzzer Status	
Link state	DI...DI...DI...
upgrade firmware	DI.....DI.....DI..... DI——
Upgrade failed	DI..DI..DI..
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, but the image is abnormal	green light slowly flashes

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.

VTX Specification

Model	Avatar module
Communication Frequency	5.725~5.850 GHz
Transmitter Power (EIRP)	FCC: <30dBm; CE: <14dBm; SRRC: <20dBm; MIC: <25dBm
I/O Interface	JST1.0*6(Power in) JST1.0*4(USB)
Mounting Holes	25.5*25.5 mm
Dimensions	33*33*9.5 mm
Storage	8 G
Recording	1080p/720p
Weight	16 g
Operating Temperature	-20~40°C
Channels	8
Wide Power Input	6V~25.2V
Supported FC System	Betaflight
OSD	Canvas mode
Latency	Average delay 22ms
Antenna	2(IPEX)

Camera parameters

Model	Avatar nano/Avatar 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	3.5g / 6g
Dimensions	14*14*17mm / 19*19*22mm
Coaxial Cable	90mm / 140mm

VTX Antenna

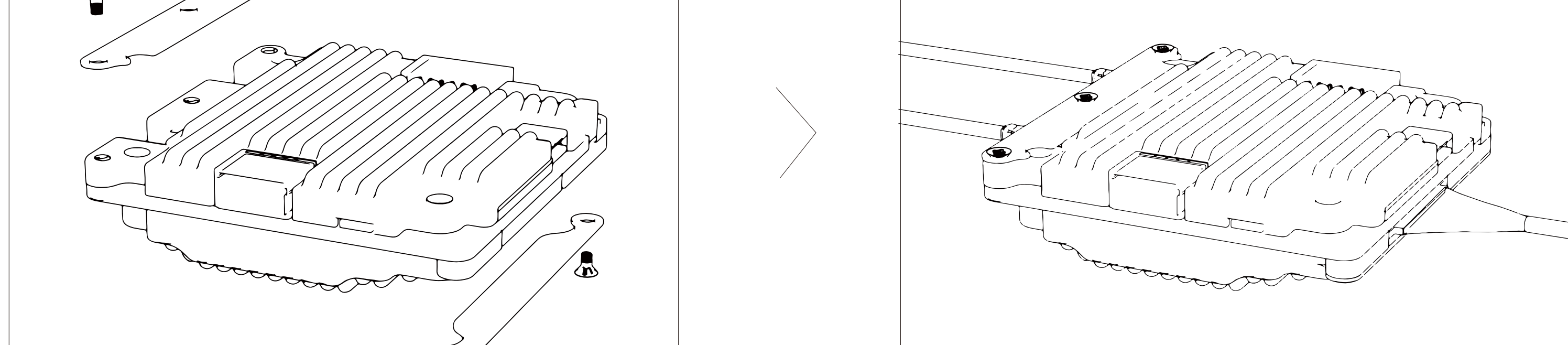
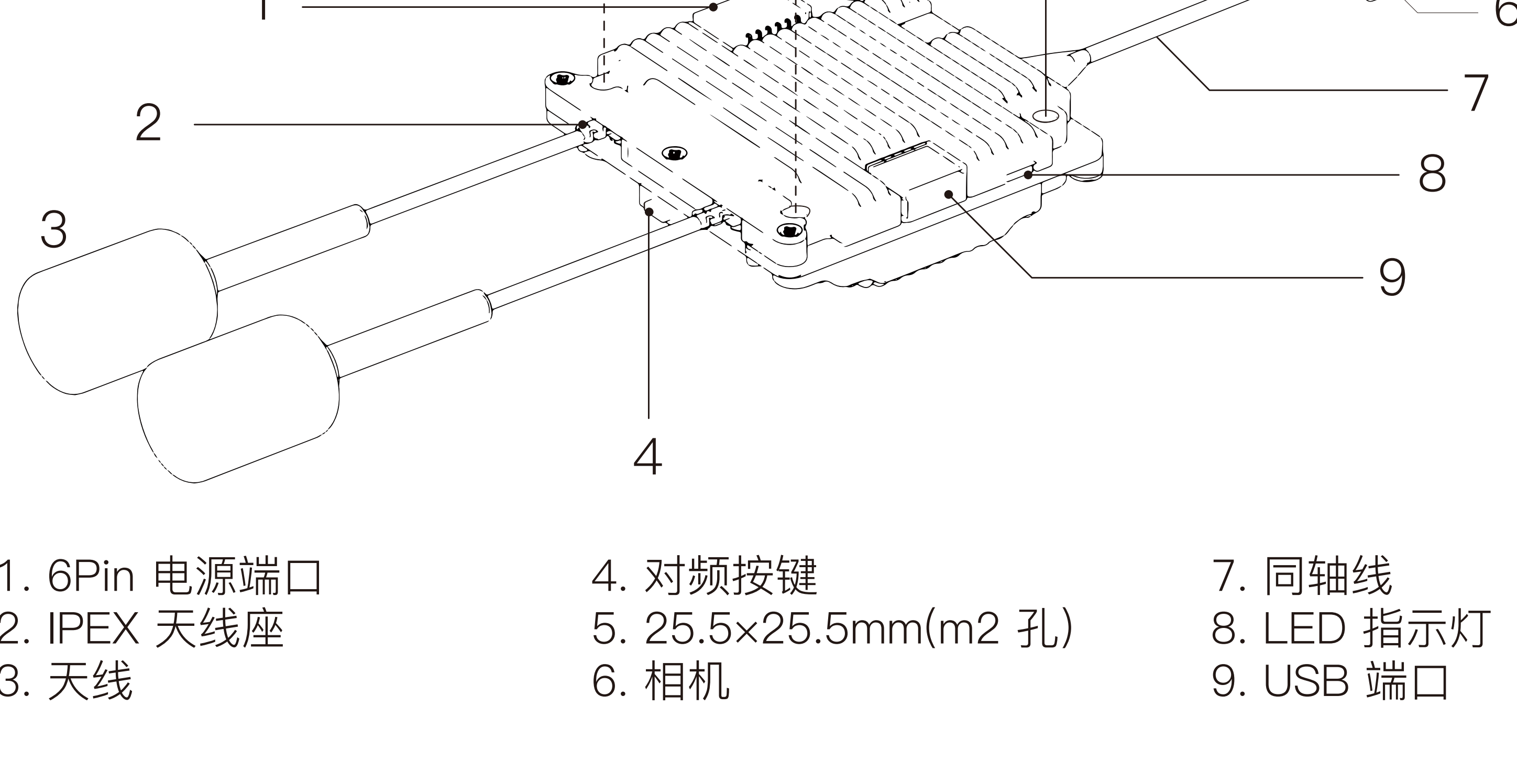
Model	Polar antenna
Polarization	LHCP
Bandwidth	5.6GHz~5.9GHz
Average Gain	2dBi
Radiation Efficiency	≥98%
VSWR	≤1.4
Connector	U.FL
Line Length	90mm
Dimension	H105mm*R11.2mm
Weight	1.5g

AVATAR KIT

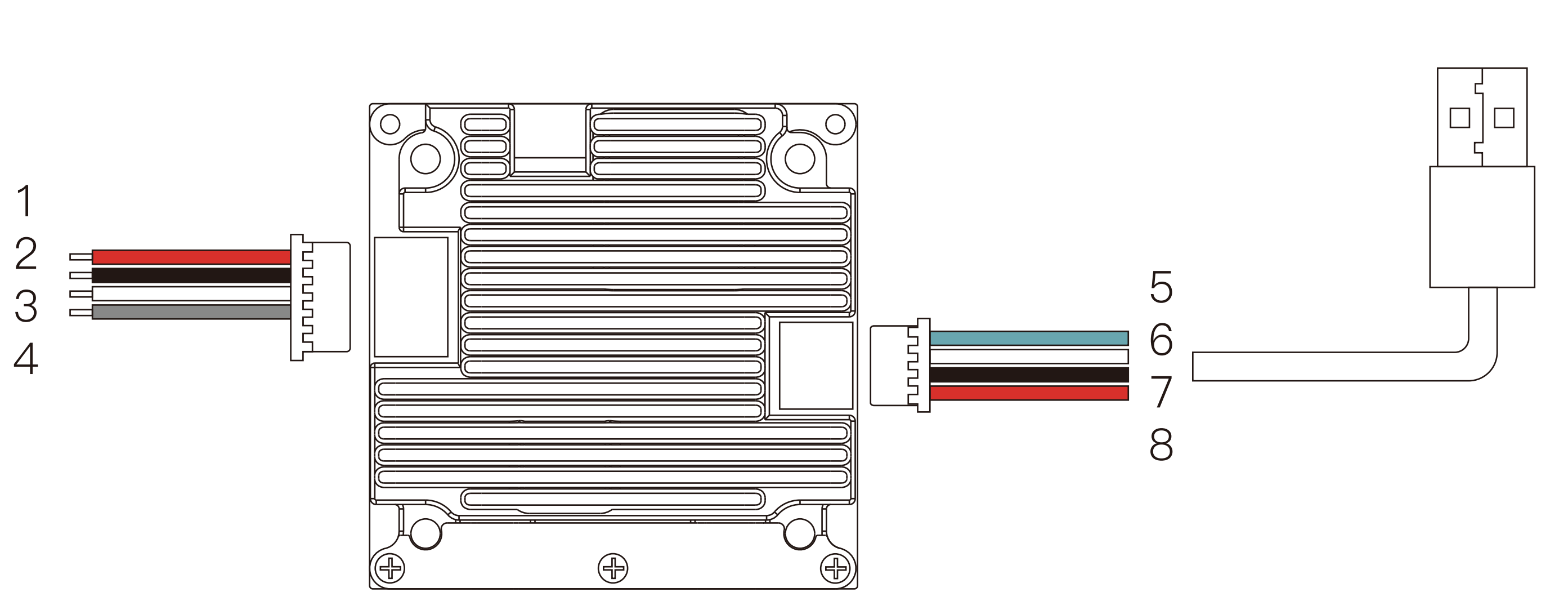
快速入门指南

V1.1

简介

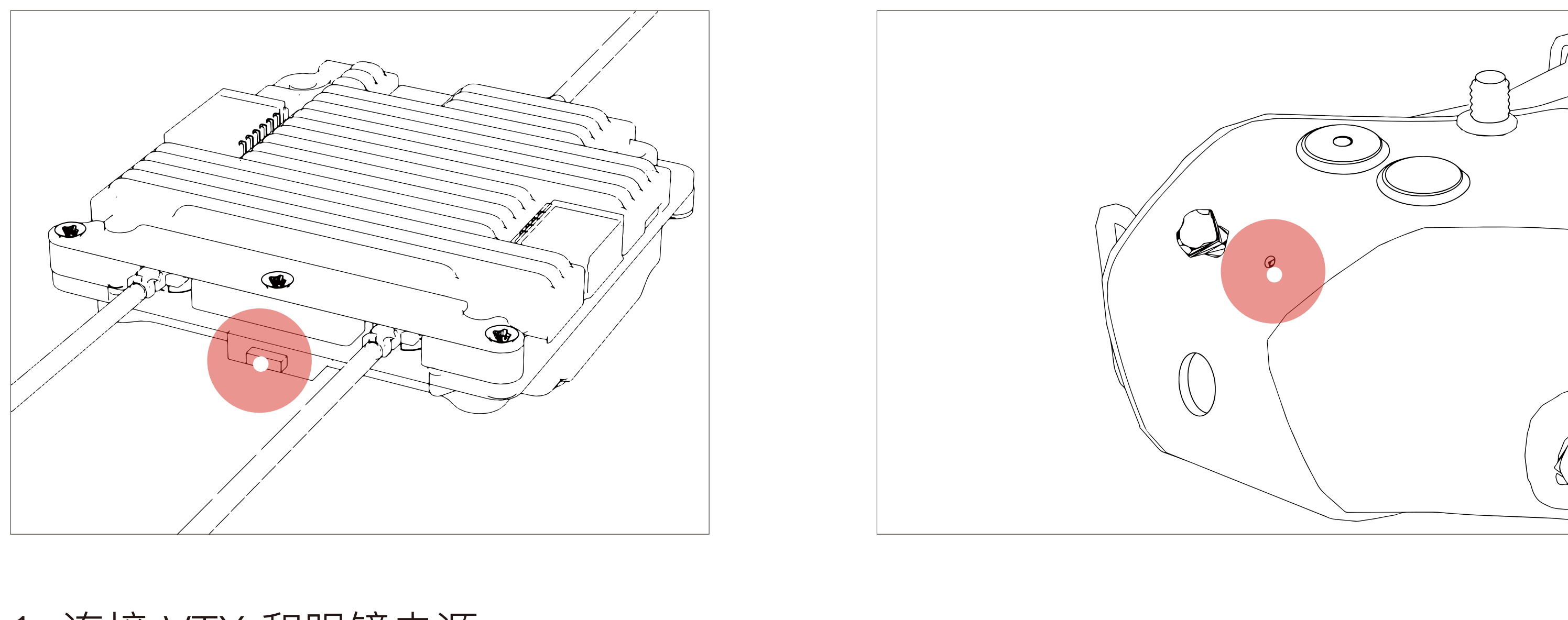


接线



*建议使用稳压电源供电，如使用6S电池供电时请务必在电池输入端安装电容
建议使用50V/47uF以上规格，电压纹波高于35V高风险烧毁设备

对频



升级

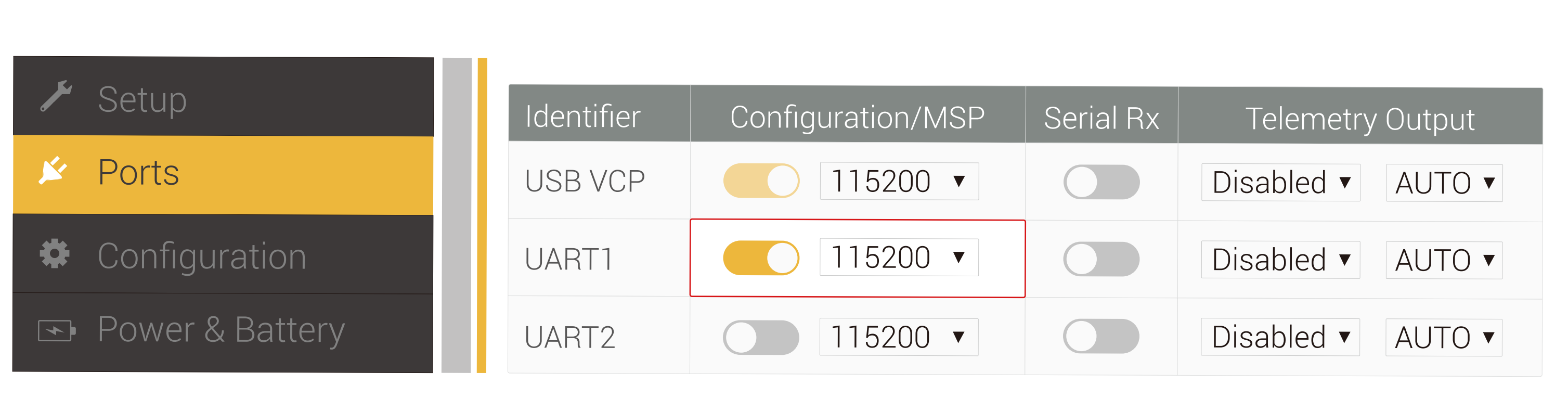
请到官网下载最新升级固件，Avatar_Sky_X.X.X.img 对应VTX 端升级固件，Avatar_Gnd_X.X.X.img 对应眼镜端升级固件，分别拷贝到 VTX 与眼镜端 SD 卡中，注意请勿修改文件名，VTX 需要通电才可使用U盘功能。

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。

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6Pin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。



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”

状态指示

眼镜端蜂鸣器状态	
对频状态	滴...滴...滴...
升级固件	滴.....滴.....滴.....滴——
升级失败	滴..滴..滴..
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，但图像异常	绿灯慢闪

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。

VTX 规格

型号	Avatar module
通信频率	5.725-5.850 GHz
发射功率 (EIRP)	FCC: <30dBm; CE: <14dBm; SRRC: <20dBm; MIC: <25dBm
接口	JST1.0*6(电源线) JST1.0*4(USB)
安装孔距	25.5*25.5 mm
外形尺寸	33*33*9.5 mm
内置存储	8 G
录制规格	1080p/720p
重量	16 g
工作环境温度	-20-40°C
频点数量	8
宽电源输入	6V-25.2V
支持飞控系统	Betaflight
OSD	Canvas mode
端到端延时	平均延时 22ms
天线	2(IPEX)

相机规格

型号	Avatar nano/Avatar camera
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 / 6g
外形尺寸	14*14*17mm / 19*19*22mm
同轴线	90mm / 140mm

VTX 天线

型号	Polar antenna
极化方向	LHCP
工作带宽	5.6GHz-5.9GHz
平均增益	2dBi
辐射效率	≥98%
驻波比	≤1.4
连接器	U.FL
线长	90mm
外形尺寸	H105mm*R11.2mm
重量	1.5g