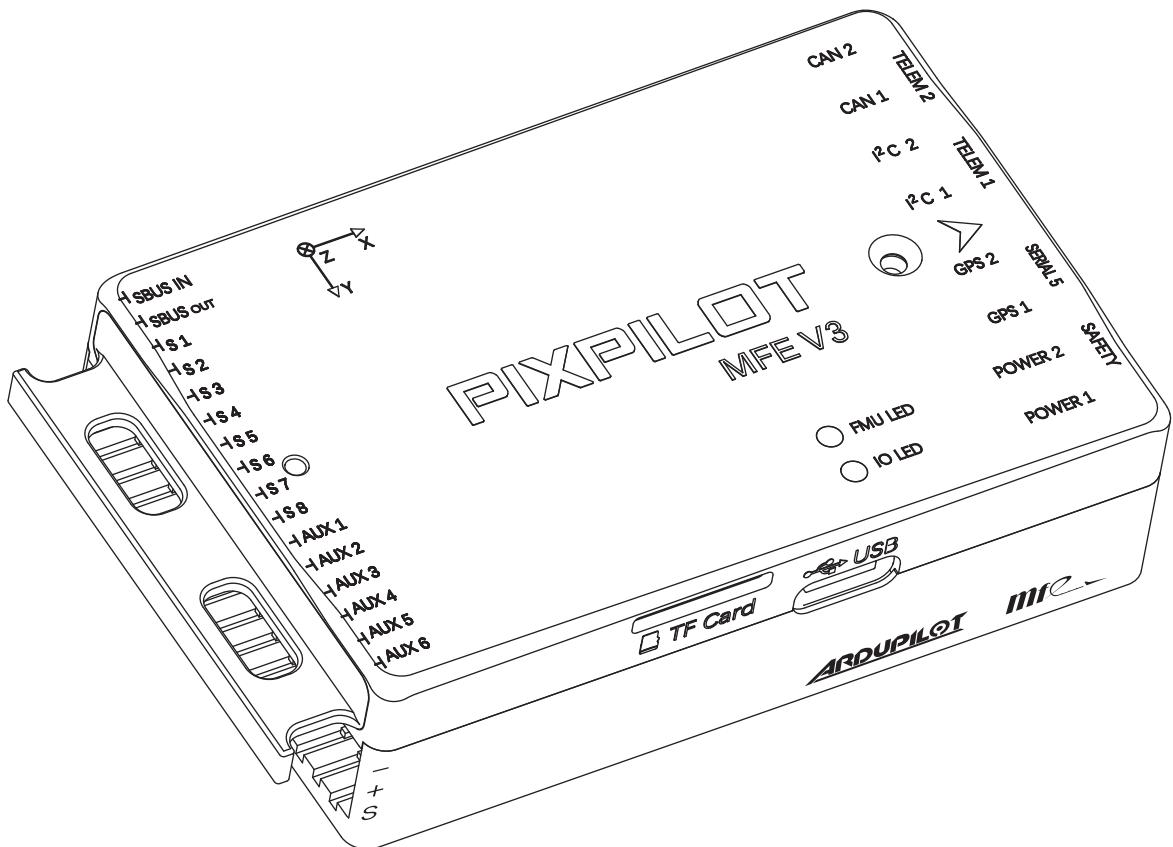


PixPilot V3

用户手册 V2

User Manual V2

2023. 11



mfe

欢迎使用PixPilot V3自动驾驶仪

Thanks for using the PixPilot V3 autopilot

简介 Introduction

PixPilot V3飞控系统是MFE团队在开源飞控FMU V3的基础上开发的一款通用型飞控，具有性能稳定、装机简洁、使用人性化的特点。

PixPilot V3 flight control system is a general-purpose flight control system developed by MFE team on the basis of open source flight control FMU V3. It has the characteristics of stable performance, simple installation and humanized use.

飞控模块 Flight Control Module

PixPilot V3硬件和接口可能存在与其它开源飞控接口定义或者线材不兼容的问题。

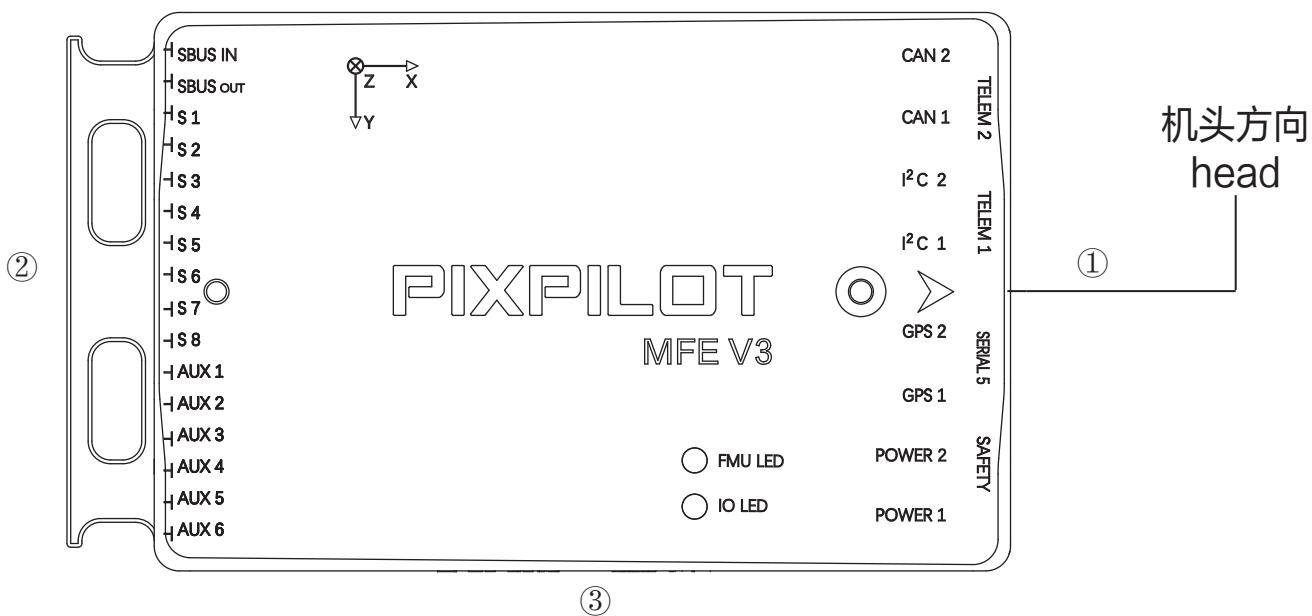
请仔细阅读接口定义的描述并且使用产品的原装配线进行接线。

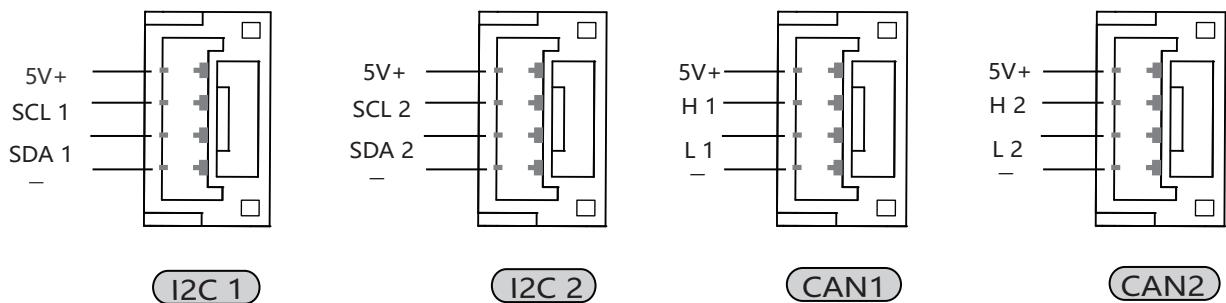
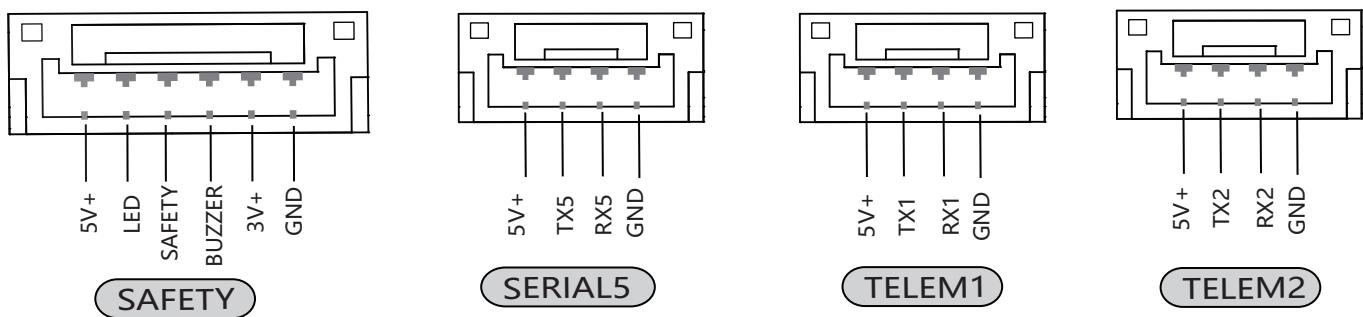
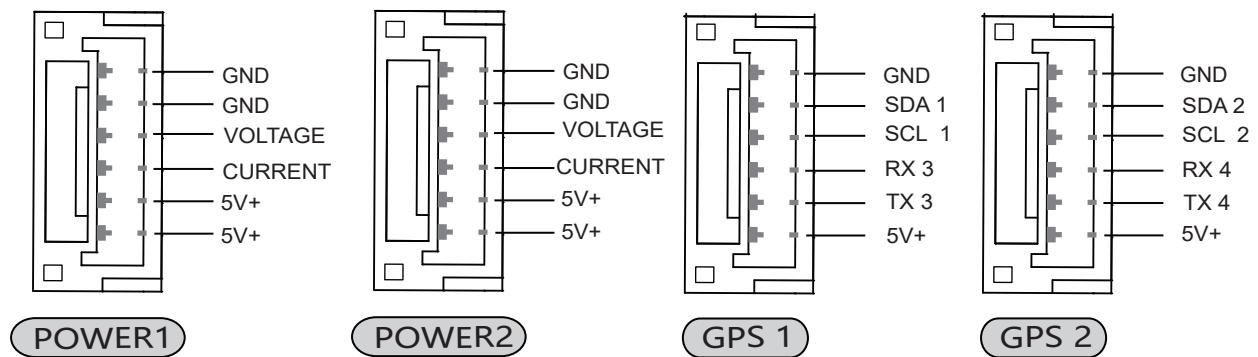
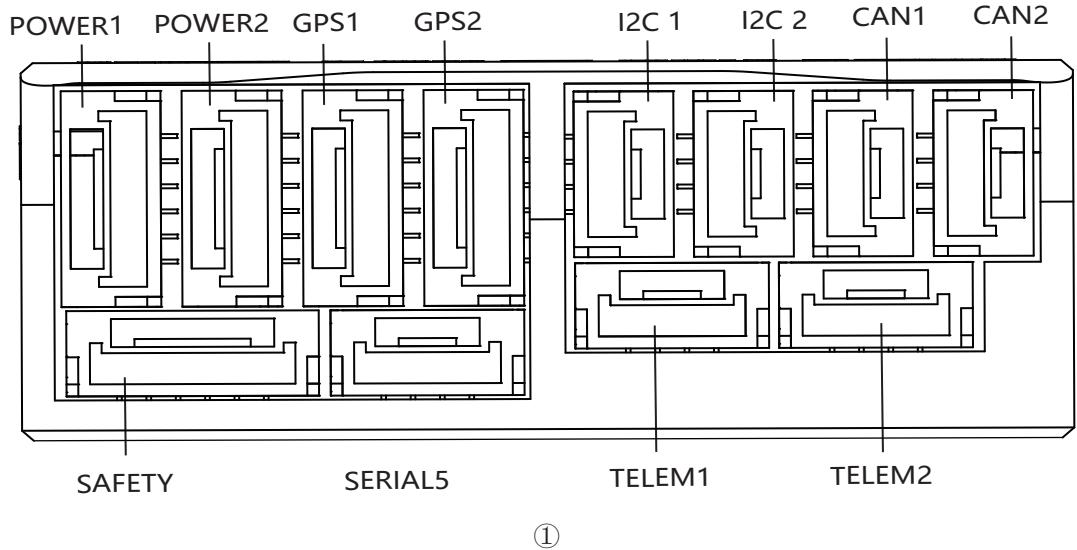
PixPilot V3 hardware and interface may be incompatible with other open source flight control interface definitions or wires.

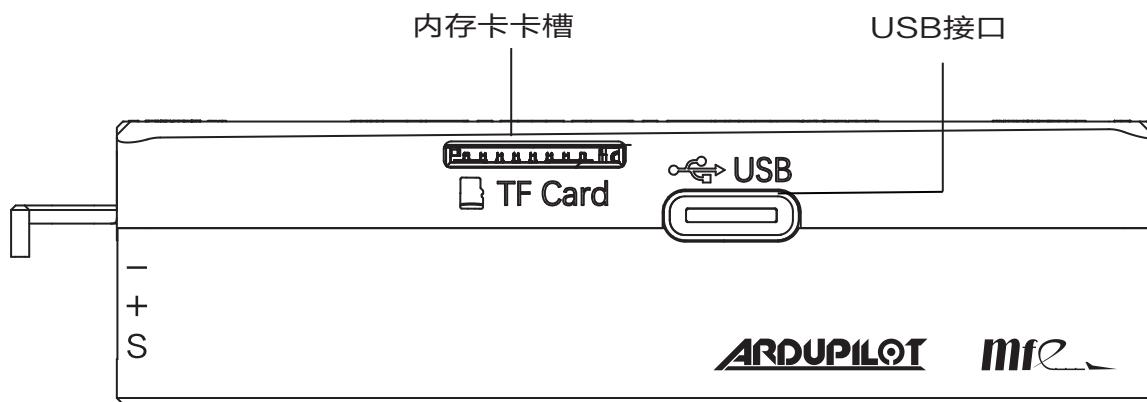
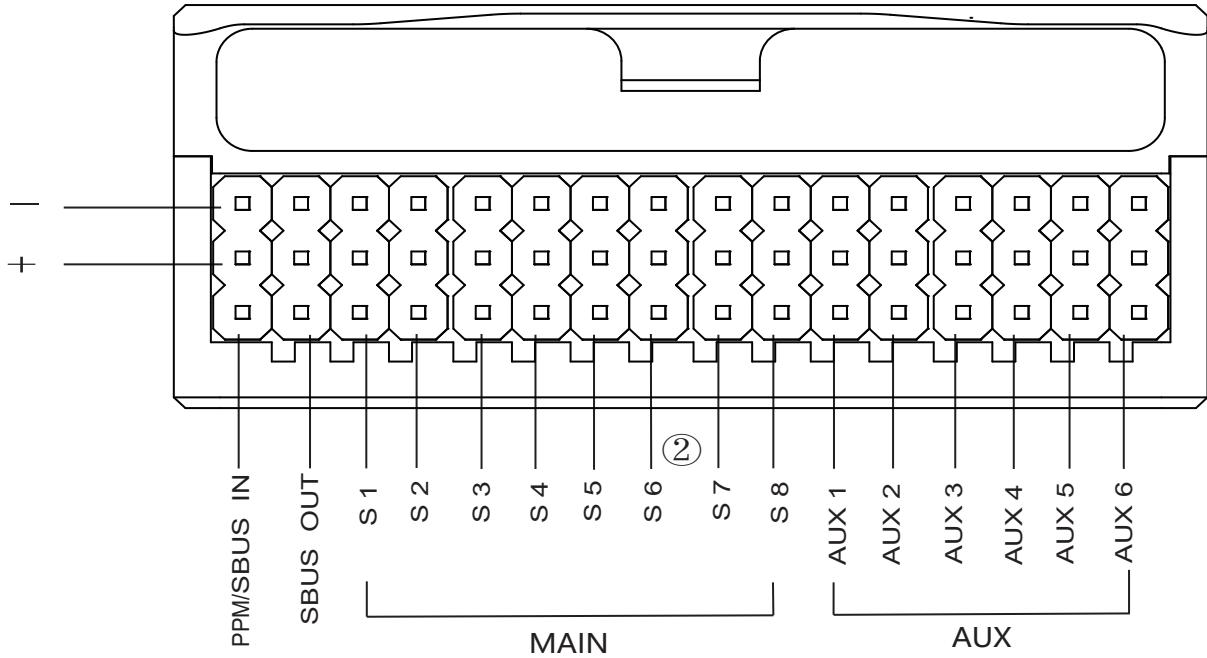
Please read the description of the interface definition carefully and use the original wiring of the product for wiring.

注意：箭头指向机头方向

attention: the arrow points to the nose





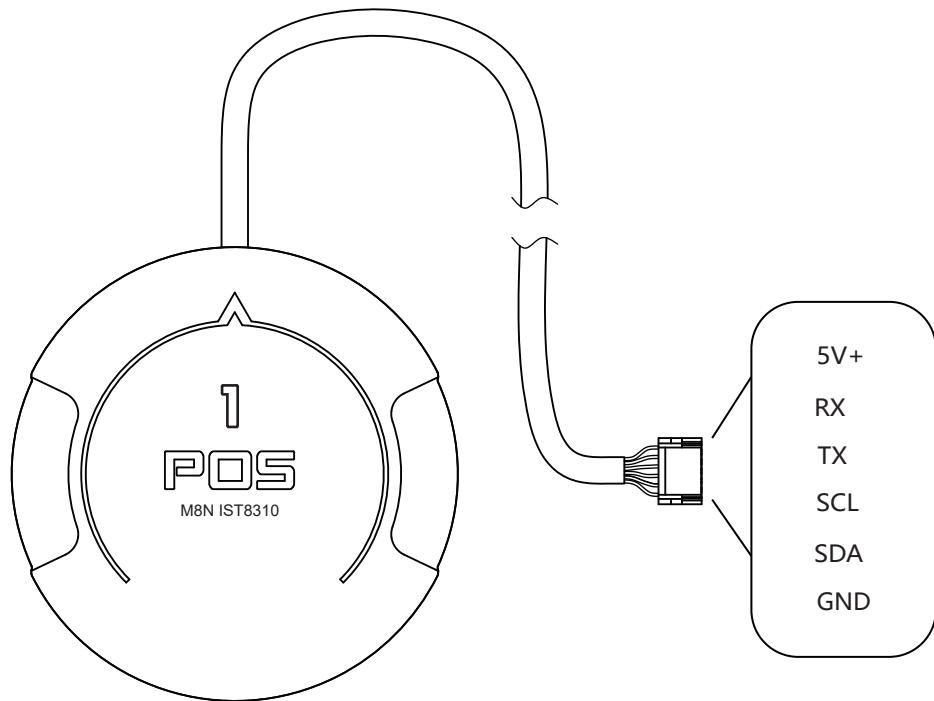


(3)

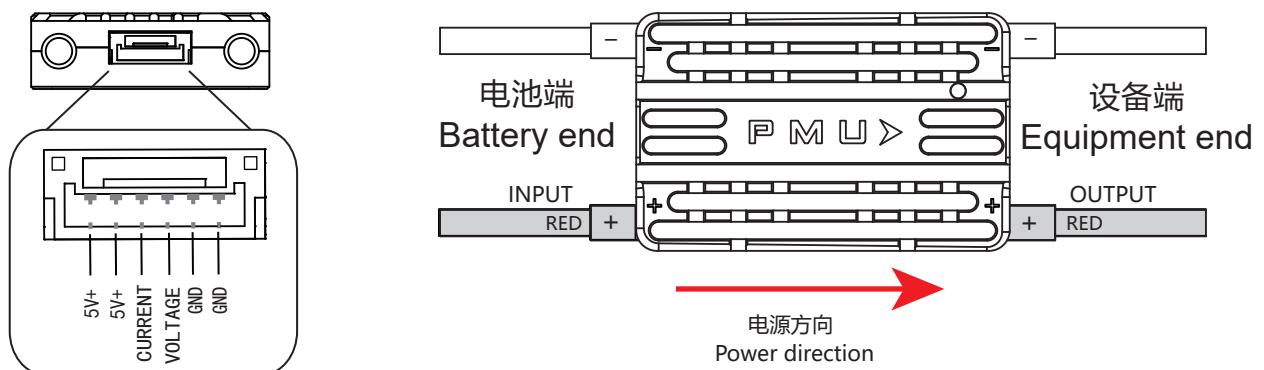
指示灯说明 Indicator Description

已解锁 Unlocked	绿灯常亮 The green light is always on	GPS 3D 定位 GPS 3D positioning
	蓝灯常亮 The blue light is always on	GPS 未定位 GPS not positioning
未解锁 Not unlocked	黄灯慢闪 The yellow light flashes slowly	飞控故障 Flight control failure
	绿灯慢闪 The green light flashes slowly	GPS 已固定 GPS fixed
	蓝灯慢闪 The blue light flashes slowly	GPS 未定位 GPS not located

POS1模块 GPS Module



PMU模块 PMU Module



规格参数 Specification Parameters

	硬件配置 (Hardware configuration)	
主处理器 Main processor	STM32F427(32 Bit Arm Cortex-M4 180Mhz 2M Flash 256K RAM)	
协处理器 Coprocessor	STM32F103(32 Bit Arm Cortex-M3 72Mhz 64K Flash 20K RAM)	
传感器 Sensor	ICM-42688-P X2 (加速度&陀螺仪) ICM-40605 X1 (加速度&陀螺仪) MS5611 X2 (气压计) IST8310 (磁罗盘)	(Acceleration & Gyroscope) (Acceleration & gyroscope) (Barometer) (Compass)

基本参数 (Basic parameters)		
飞控 Flight control	UART	5
	I2C	2
	CAN	2
	PWM	8+6
	PPM/SBUS-IN	1
	SBUS-OUT	1
	Power 1	1
	Power 2	1
	USB-Type-C	1
	TF-卡槽 TF-card slot	1
	外壳材质 Shell material	CNC航空铝合金 CNC Aviation aluminum alloy
	工作温度 Operating temperature	-10 °C~55°C
POS1	尺寸 Size	76X45X19 (mm)
	重量 Weight	60g
硬件配置 (Hardware configuration)		
GPS	U-blox M8N	
磁罗盘 (Magnetic compass)	IST8310	
参数性能 (Parametric performance)		
定位精度 Positioning accuracy	2.5m	
更新频率 Update frequency	10hz (Max)	
冷启动 Cold start	26S	
热启动 Hot start	1S	
追踪灵敏度 Tracking sensitivity	-167dBm	
磁罗盘精度 Magnetic compass accuracy	±1度 (±1 degrees)	
磁罗盘分辨率 Magnetic compass resolution	0.3uT/LSB	
基本参数 (Basic parameters)		
POS1	工作电压 Operating voltage	5V
	工作温度 Operating temperature	(-10 °C~70°C)
	尺寸 Size	模块 module: 60x60x17(mm) 线 wire: 300 mm
	重量 weight	35g

PMU	工作电压 Operating voltage	12 V – 60 V (3S – 12S电池) (3S – 12S battery)
	工作电流 Working current	0-80 A
	电压精度 Voltage accuracy	±0.1 V
	电流精度 Current accuracy	±0.2 A
	电压分压比 Voltage divider ratio	18
	电压A/V比 Voltage A/V ratio	24
	稳压输出 Regulated output	5.3V/5A
	工作温度 Operating temperature	-20 ~ +100°C
	接口 Interface	IN/OUT: AWG 12 Power:SM06B-GHS-TB
	尺寸 Size	模块 module: 50x32x10(mm) 线 wire: 220 mm
	重量 Weight	65g

配件清单 Accessories list

配 件 (Accessories)	数 量 (Quantity)
PixPilot MFE V3飞控模块 (PixPilot MFE V3 Flight control module)	1
PixPilot PMU模块 (PixPilot PMU module)	1
PixPilot GPS模块 (PixPilot GPS module)	1
I2C/CAN扩展模块 (I2C/CAN expansion module)	1
安全开关+蜂鸣器模块 (Safety switch and Buzzer module)	1
PPM/SBUS-IN信号线 (PPM/SBUS-IN Signal line)	1
SBUS-OUT信号线 (SBUS-OUT Signal line)	1
I2C/CAN扩展线 (I2C/CAN Expansion line)	2
安全开关+蜂鸣器线材 (Safety switch and Buzzer wire)	1
PMU电压电流线材 (PMU Voltage and Current wire)	2
TYPE-C数据线 (TYPE-C Data cable)	1
32G TF卡 (32G TF Card)	1
3M双面胶 (3M Double-sided tape)	4

技术支持 Technical Support

访问下面链接获取详细的安装、调试、试飞技术支持。Visit the link below for detailed installation, commissioning and flight test technical support.

<https://doc.makemyeasy.com>

免责声明 Disclaimers

PixPilot V3是一款开源飞控系统，任何理由引起直接、间接衍生性意外伤害造成的后果，厂家不承担任何责任，禁止用于军事用途。

PixPilot V3 is an open source flight control system. The manufacturer will not bear any responsibility for the consequences of direct and indirect derivative accidental injuries for any reason, and it is prohibited to use it for military purposes.

注意事项 Matters Needing Attention

请遵守当地法规，不要在禁飞区内飞行。请确保飞行器飞行时远离人群及危险物品，切勿在饮酒，疲劳或精神不佳状况下进行任何飞行器操作。

Please observe local regulations and do not fly in the no fly zone. Please ensure that the aircraft flies away from people and dangerous goods. Do not operate the aircraft under the condition of drinking, fatigue or poor spirit.