飞控使用指南

ht Control User Guide

Basic Parameters
基本参数

1.飞控尺寸55*39mm

Flight control size: 55*39mm

2.重量:15g

Weight: 15g

3.主控:Stm32F765IIK6

Main control: Stm32F765IIK6

4.IMU独立减震(3颗冗余)

IMU independent shock absorption (3 redundant)

5.主控:STM32F765

Main control: STM32F765

6.接口:PWM*8、IIC*2、uart*4、CAN*1、sbus-in*1

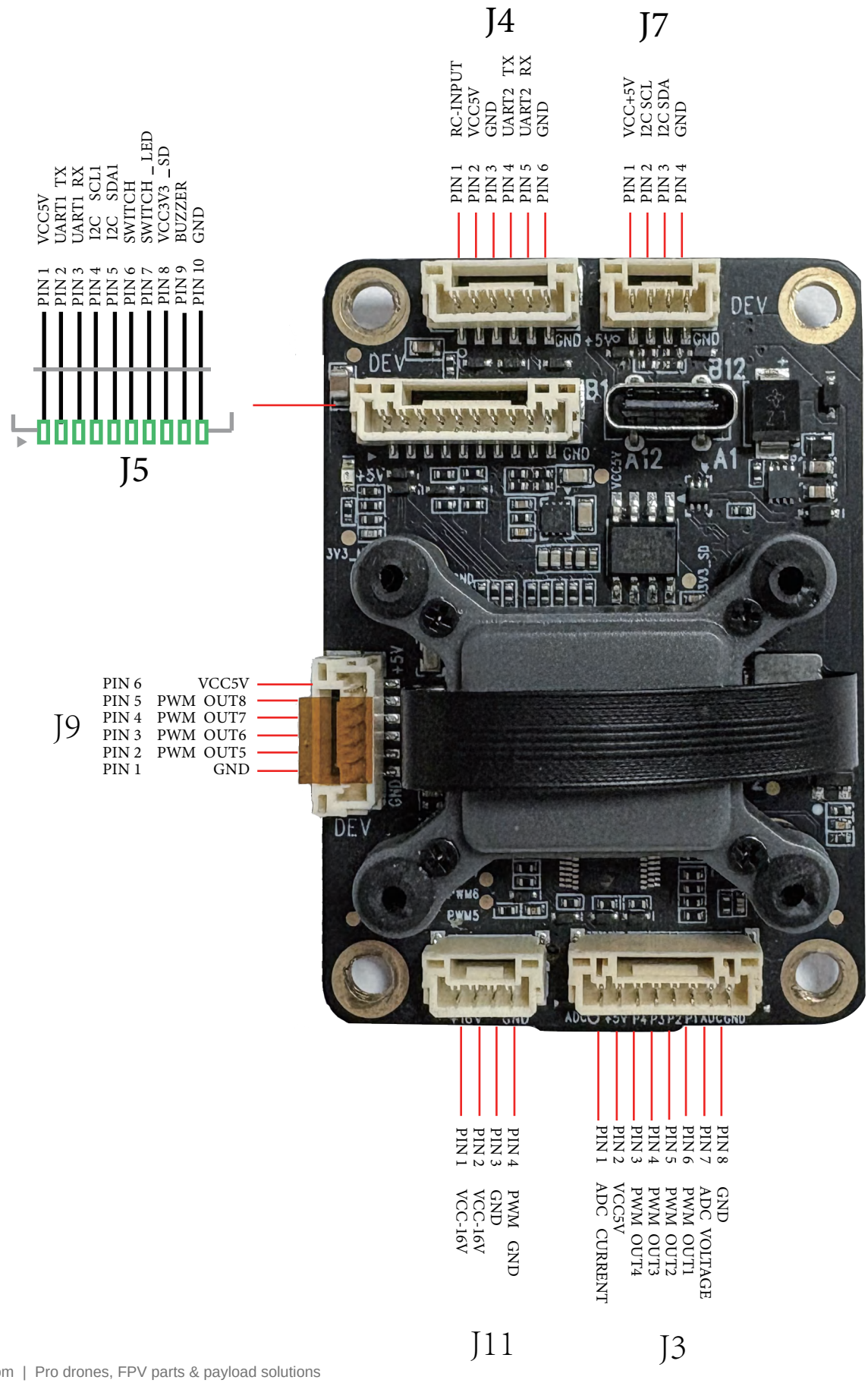
Interface: PWM*8, IIC*2, uart*4, CAN*1, sbus-in*1

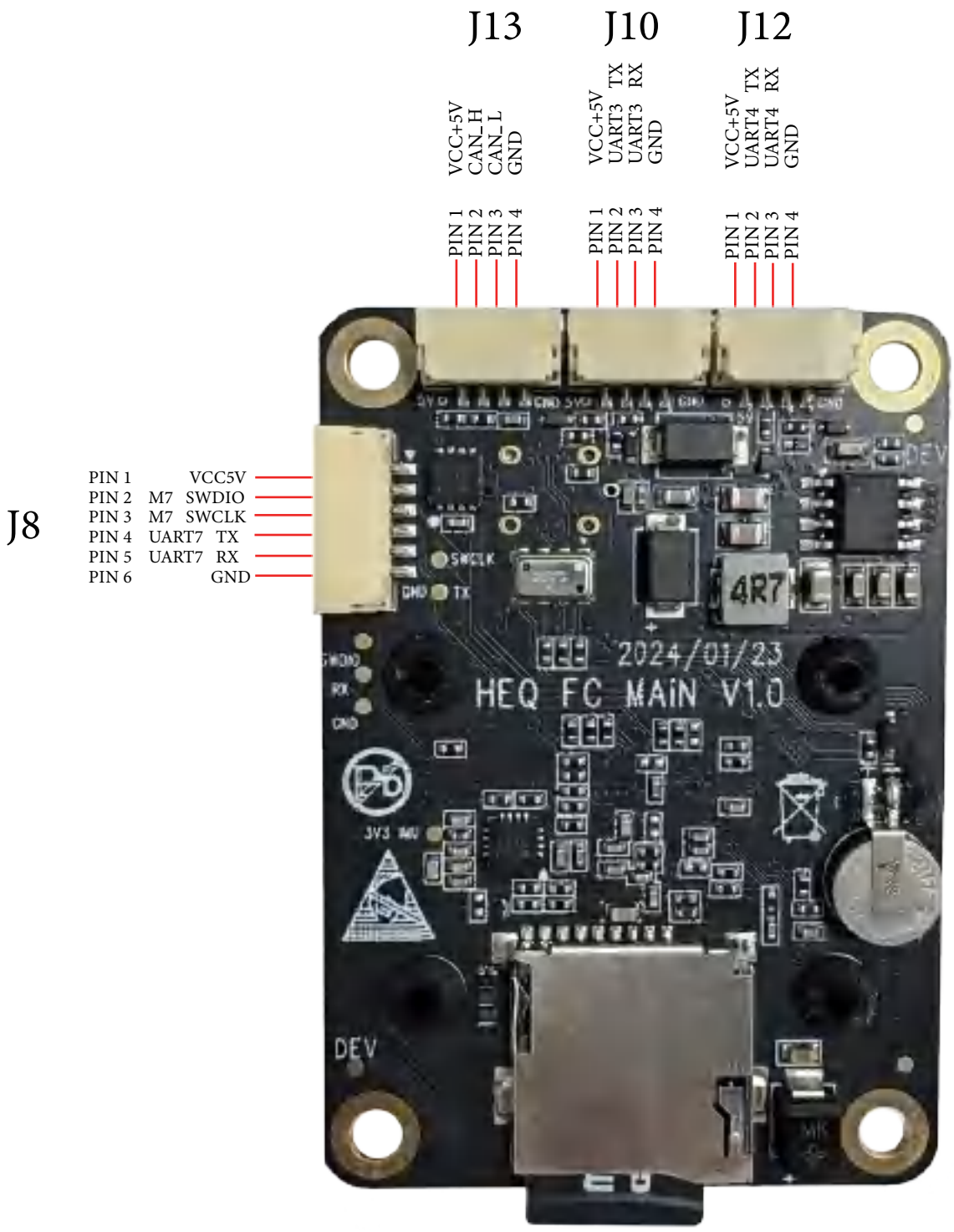
7.电源:16.8V输入 5V输入\输出

Power supply: 16.8V input, 5V input\output

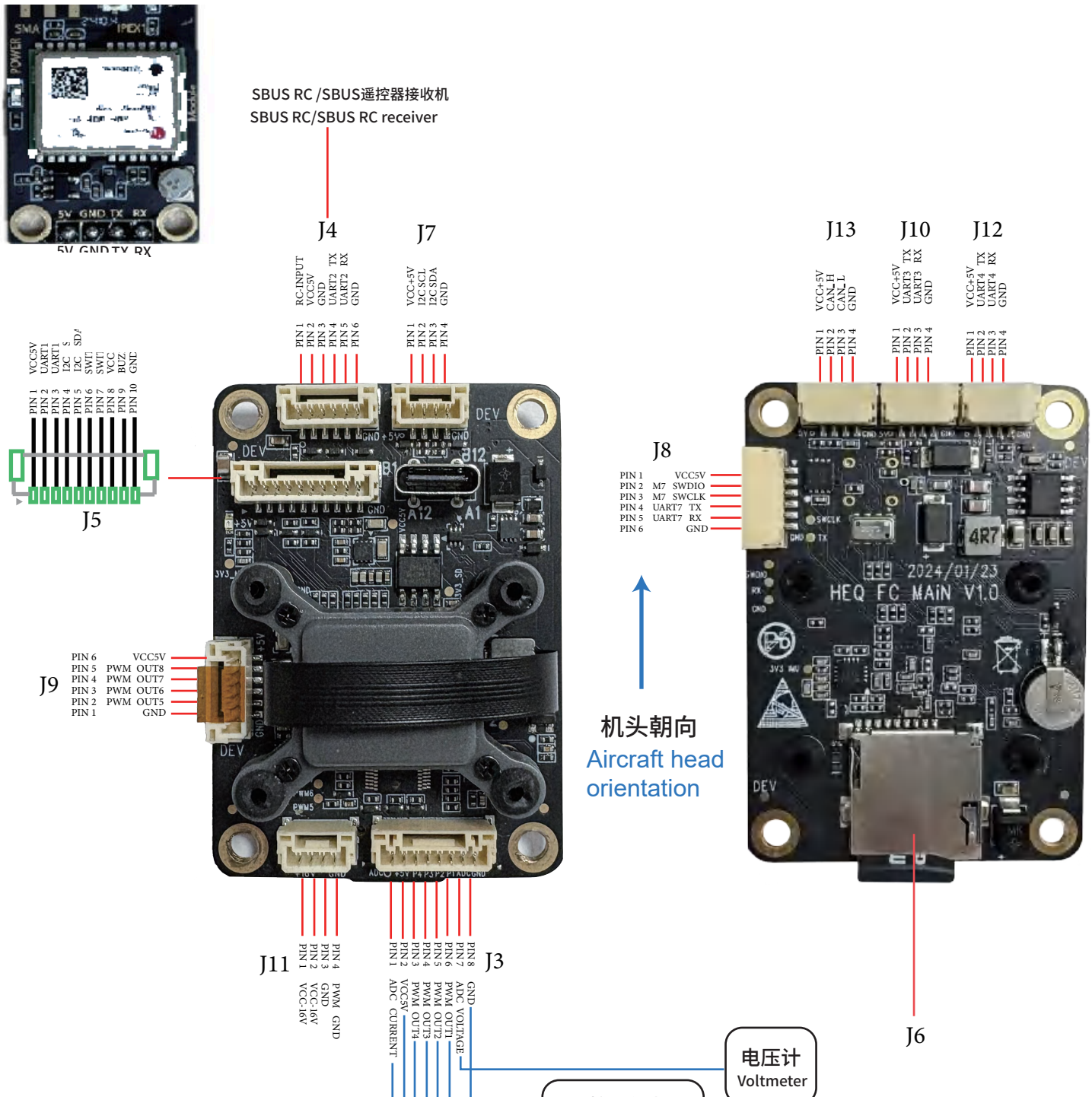
terface Definition

口定义




J13
VCC+5V
CAN_H
CAN_L
GND
PIN 1
PIN 2
PIN 3
PIN 4
J10
VCC+5V
UART3 TX
UART3 RX
GND
PIN 1
PIN 2
PIN 3
PIN 4
J12
VCC+5V
UART4 TX
UART4 RX
GND
PIN 1
PIN 2
PIN 3
PIN 4
J8
PIN 1 VCC5V
PIN 2 M7 SWDIO
PIN 3 M7 SWCLK
PIN 4 UART7 TX
PIN 5 UART7 RX
PIN 6 GND
4R7
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HEQ FC MAIN V1.0
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连接器名称 Connector Name	Function		
	PX4固件 PX4 Firmware	垂起固件 VTOL Firmware	APM固件 APM Firmware
J3	连接电源模块；电源输入和电 检测；PWM输出，可用于控制电机 Connect power module; power input and voltage, current detection; PWM output, can be used to control the motor		
J4	SBUS/Telegram 1	Serial 1（Sbus 不可以）(Sbus No)	
J5	全球定位系统GPS GPS		
J6	插入SD卡进行日志存储 Insert SD card for log storage		
J7	I2C接口 I2C Interface	I2C接口（空速计） I2C interface (airspeed meter)	I2C接口 I2C Interface
J8	BUG调试口，读取调试信息 BUG debugging port, read debugging information	Uart7 RX 为sbus输入 Uart7 RX is sbus input	
J9	预留PWM Reserved PWM		
J10	电台口（Telegram 2）（需要设置） Radio port (Telegram 2) (need to be set)	电台口（Serial2）（默认开启） Radio port (Serial2) (enabled by default)	
J11	16.8V连接电源，可不接 16.8V power supply connection, optional		
J12	电台口（Telegram 4/serial 4）（需要设置） Radio port (Telegram 4/serial 4) (need to be set)	不可用 Unavailable	电台口（Serial 4）（默认开启） Radio port (Serial 4) (enabled by default)
J13	连接CAN GPS等UAVCAN设备 起固件不可用） Connect to UAVCAN devices s s CAN GPS (not available for VTOL firmware)		

《4 Firmware Flashing Guide

4固件烧录指南

从QGC官网下载最新地面站,选择您使用的平台对应的软件下载,后续固件刷写以Windows为例:

Download the latest ground station from the QGC official website, select the software download corresponding to the platform you are using, and the subsequent firmware flashing takes Windows as an example

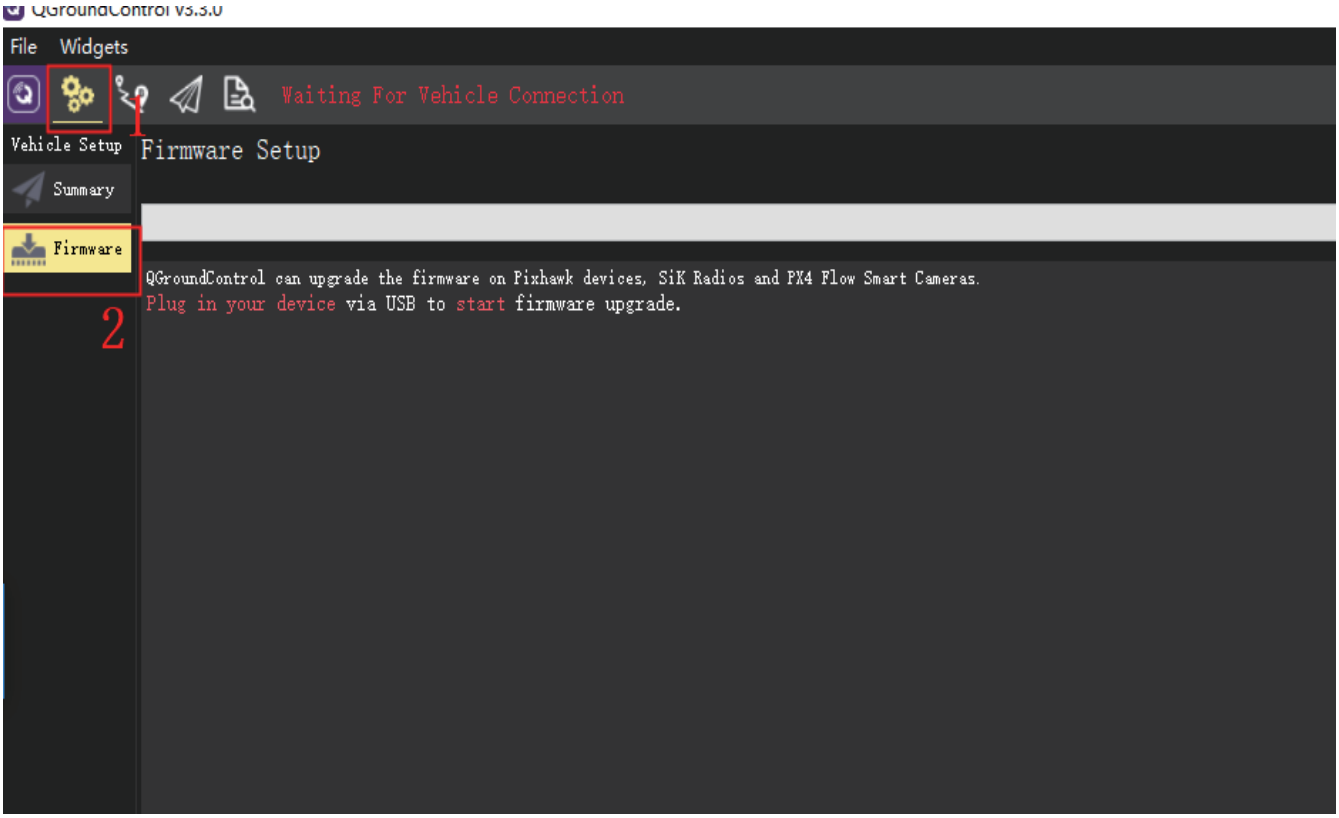
https://docs.qgroundcontrol.com/master/en/qgc-user-guide/getting_started/download_and_install.html#windows

在线烧写固件

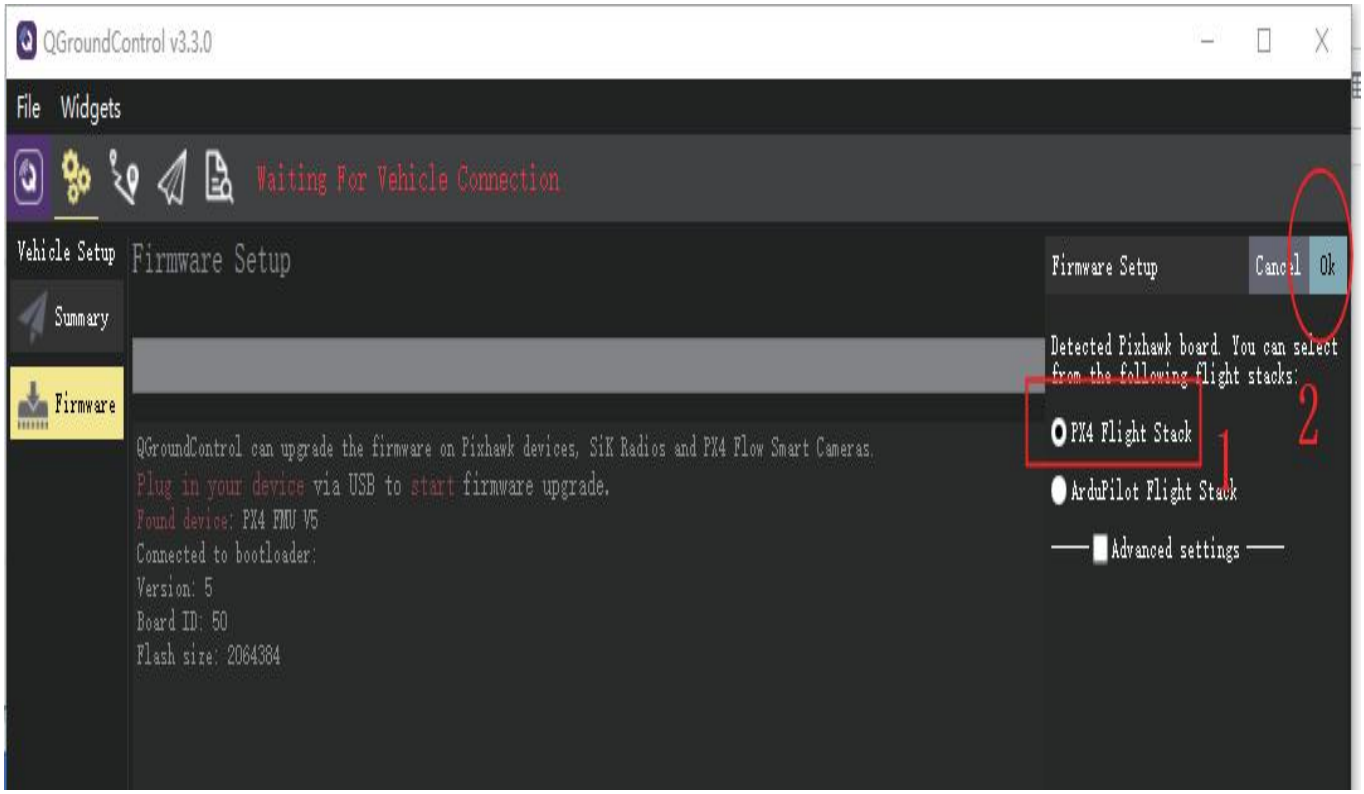
Online firmware burning

将飞控连接到电脑,打开QGroundControl地面站,点击设置图标>点击固件。

Connect the FC to your computer, open QGroundControl, click the Settings icon > click “Firmware”.

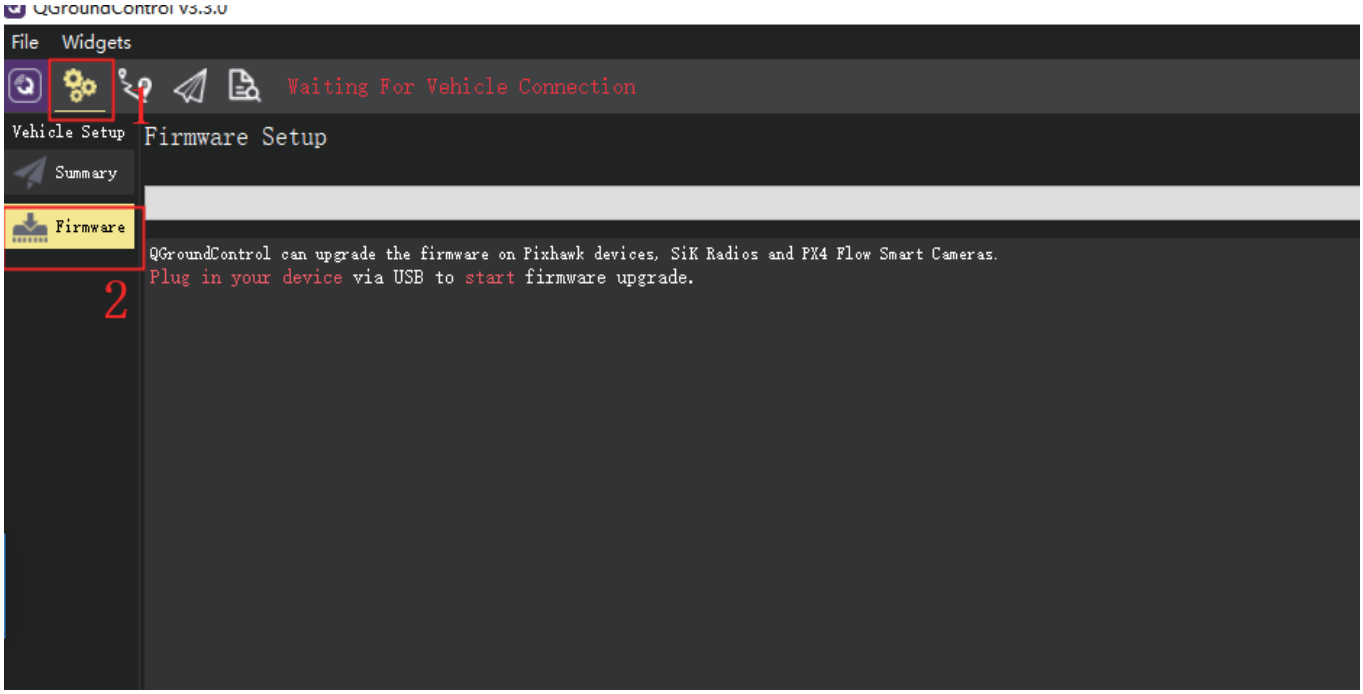


通过USB线将飞控连接到电脑，地面站右侧会弹出以下窗口“需要选择PX4 Flight Stack”OK。
Connect the FC to the computer via a USB cable, and the following window will pop up on the right side of the ground station,need to select: "PX4 Flight Stack", then click“OK”.



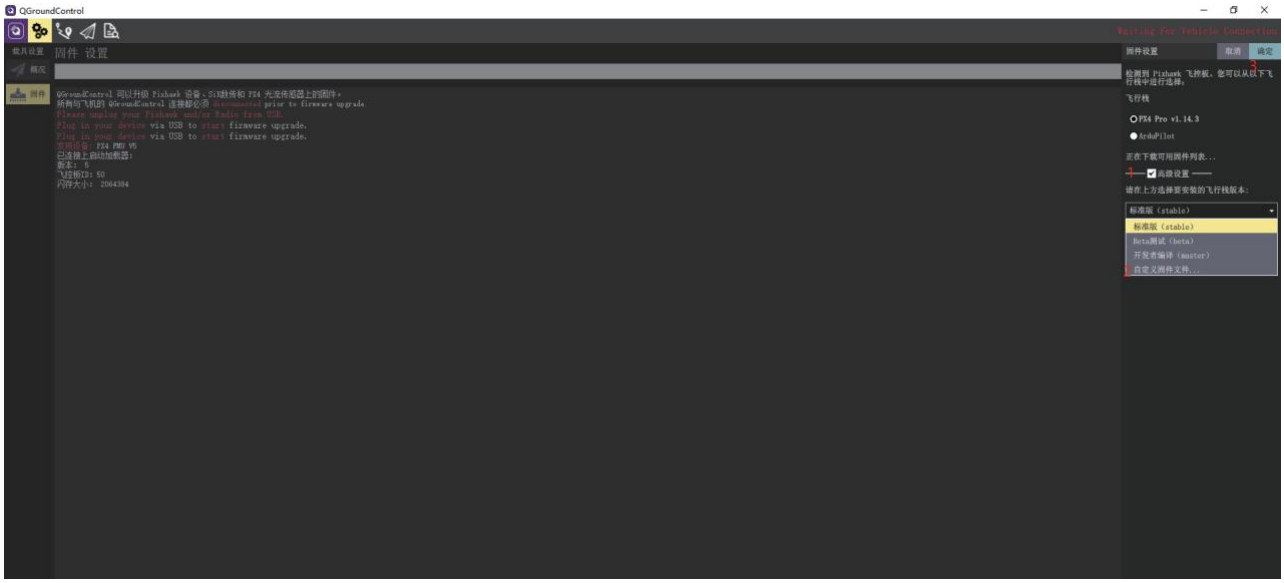
写入本地固件
Write local firmware

将PX4本地固件下载到本地。
Download the PX4 local firmware to the local computer.
打开地面站>单击设置图标>然后单击固件。
Open the ground station > click the “settings” icon > then click “firmware”.



•通过USB线将飞控连接到电脑，地面站右侧会弹出以下窗口“需要选择高级设置”>自定义固件文件>查找本地的固件，点确定。

Connect the FC to the computer via a USB cable.The following window will pop up on the right side of the ground station. You need to select "Advanced Settings" → "Custom Firmware File" > "Search for Local Firmware" and click “OK”

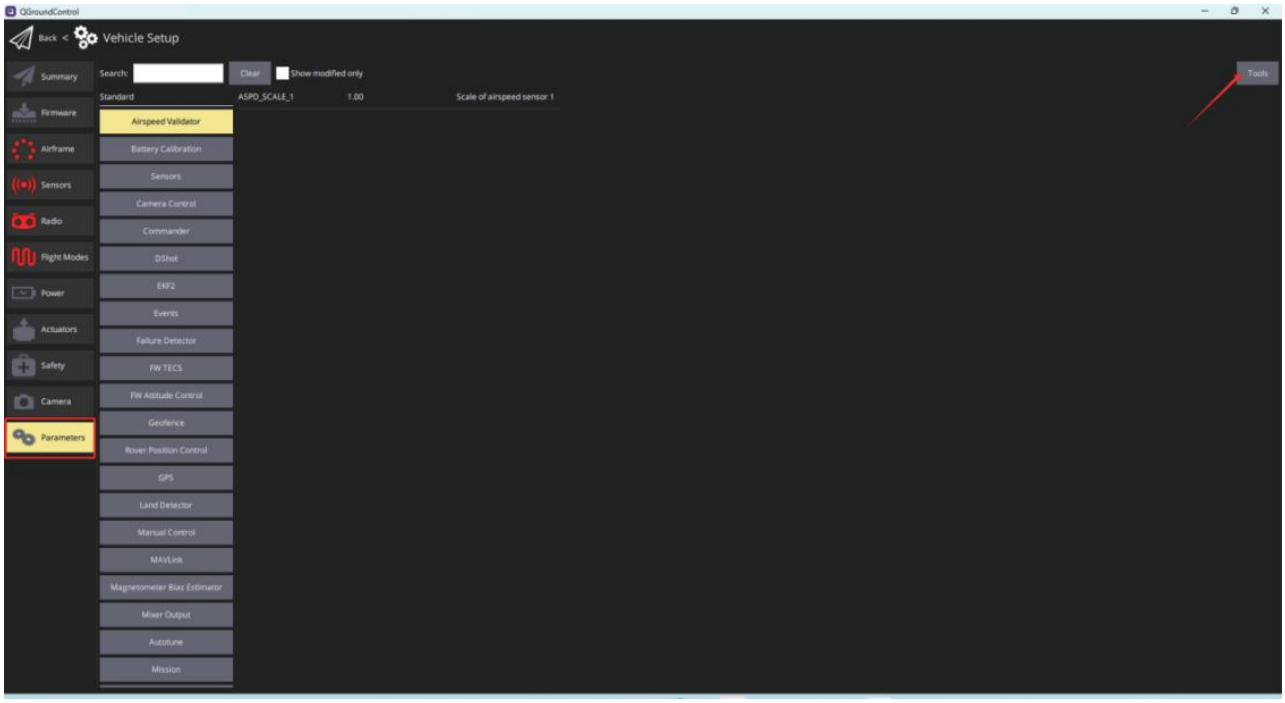


《4 Firmware Parameter flashing

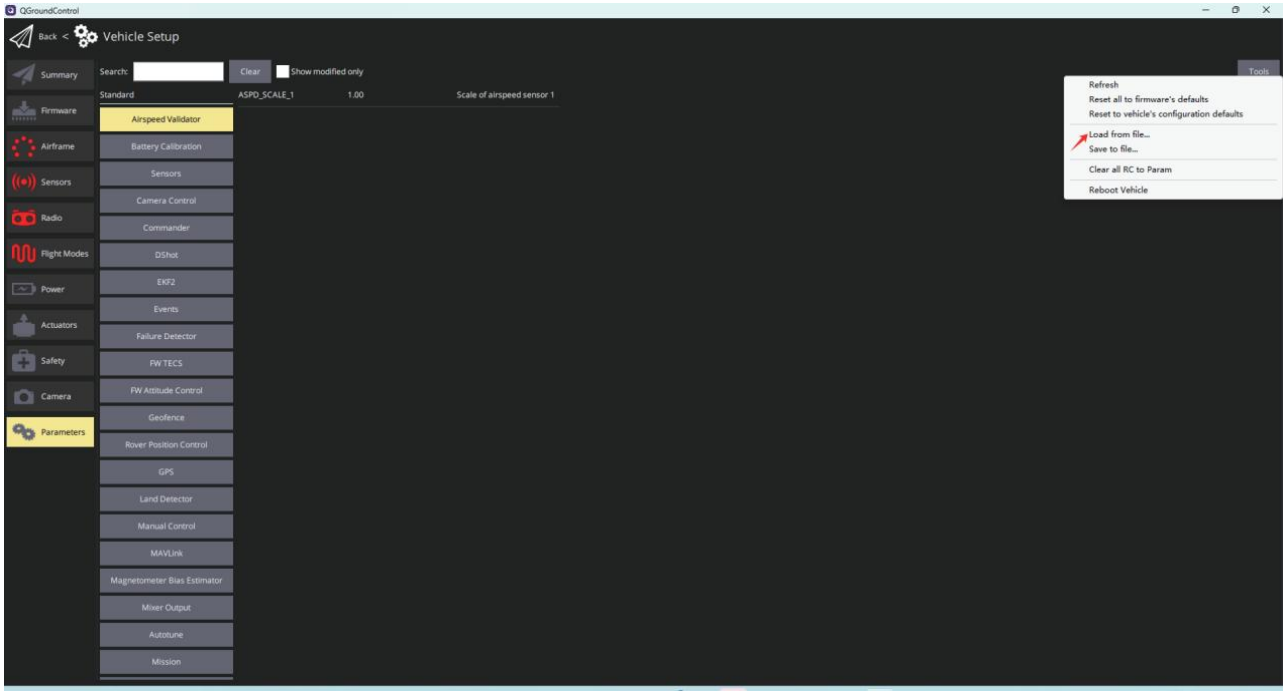
4固件的参数刷写

将PX4本地的参数下载到本地。
Download the local parameters of PX4 to the local computer.

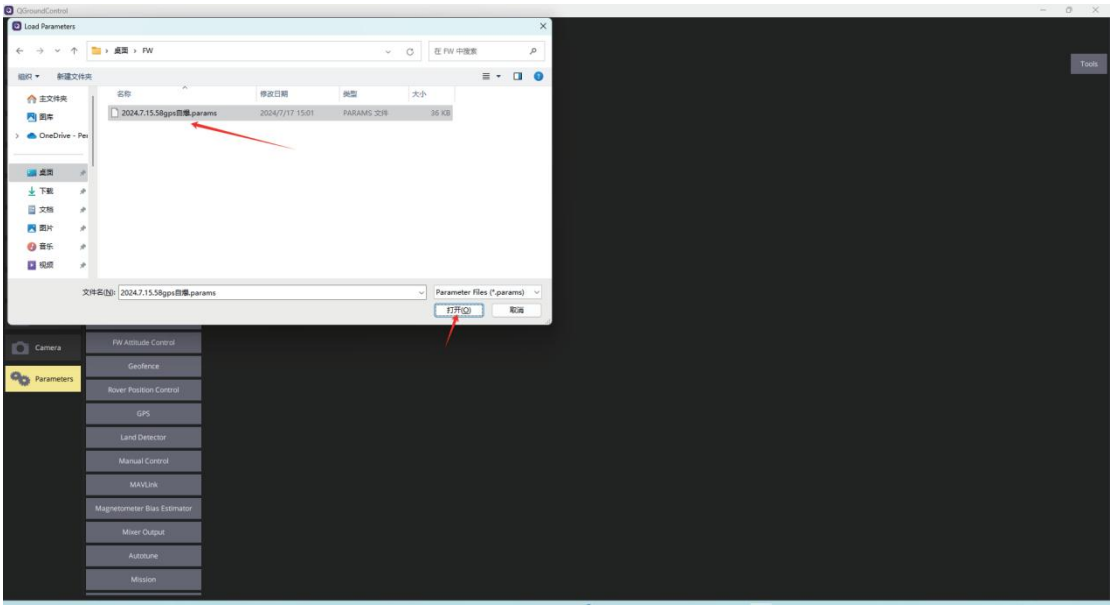
点击Parameters栏目，点击右上角Tool
Click the "Parameters" column and click "Tool" in the upper right corner.

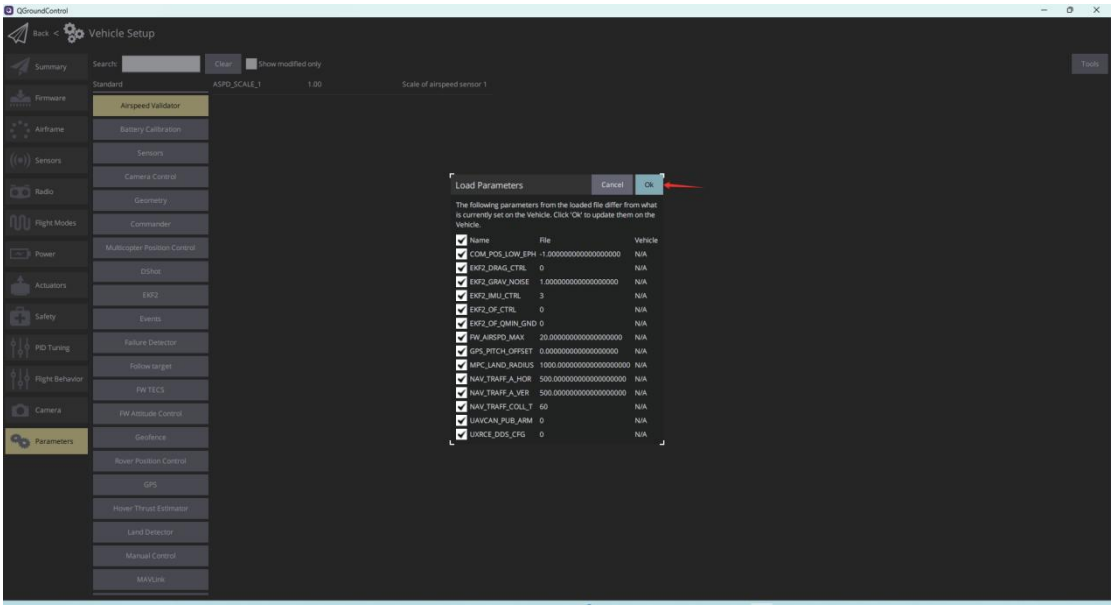


点击Load From file
Click “Load From file”

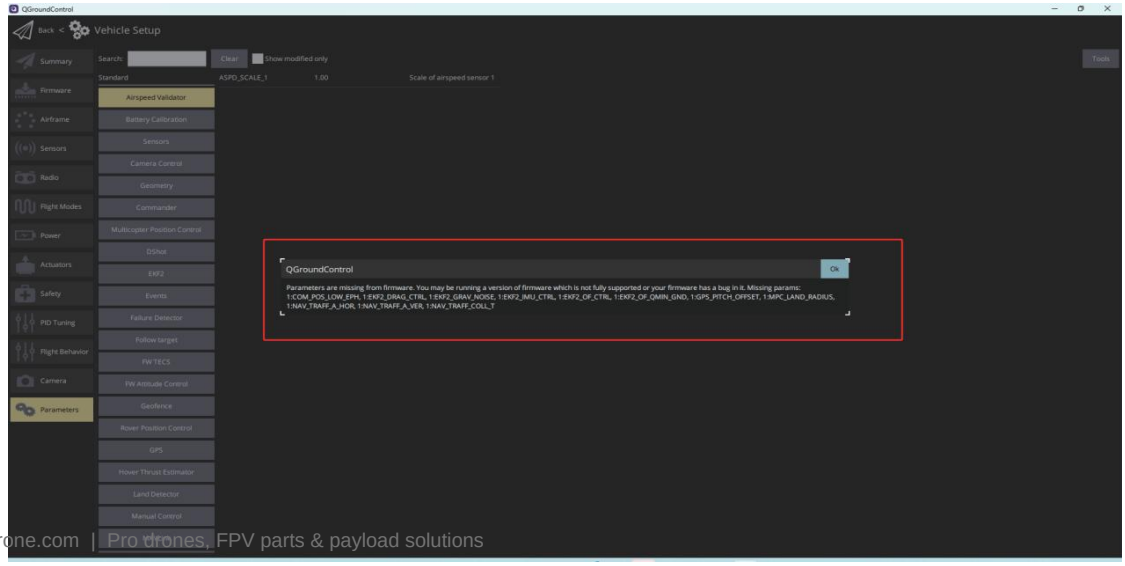


选择参数文件
Select parameter file





忽略出现的弹窗提示，全部点击OK，所有弹窗消失后，重启飞控参数生效。
Ignore the pop-up prompts that appear and click “OK” for all. After all pop-up windows disappear, restart,and the flight control parameters will take effect.



PM Firmware Guide

PM固件指南

从APM官网下载最新地面站,选择您使用的平台对应的软件下载,后续固件刷写以Windows为例

Download the latest ground station from the APM official website, select the software download corresponding to the platform you are using, and the subsequent firmware flashing takes Windows as an example

https://ardupilot.org/planner/docs/mission-planner-overview.html

写入本地固件

Write Local Firmware

将APM本地固件下载到本地。

Download the APM local firmware to your local computer.

通过USB线将飞控连接到电脑>打开Mission Planner地面站>单击初始设置图标>然后单击安装固件Legacy>选择自定义固件(需要使用编译的固件,当前版本为4.5.4)。

Connect the FC to your computer via USB cable > Open the "Mission Planner" ground station > Click the "Initial Settings" icon > Then click "Install Firmware Legacy" > Select "Custom Firmware".(Requires firmware compiled with current version is 4.5.4).



注意:APM固件的SBUS输出
Note:APM firmware SBUS output

接线图概述的J8序号,将uart 7 RX接入SBUS信号线即可。
According to the J8 serial number outlined in the wiring diagram, connect uart 7 RX to the SBUS signal line.

打开Mission Planner地面站>单击配置/调试>全部参数表>将SERIAL6_OPTIONS改为3,SERIAL6_PROTOCOL改为23即可。
Open Mission Planner ground station > click "Configuration/Debug" > All Parameters > change SERIAL6_OPTIONS to 3, and SERIAL6_PROTOCOL to 23.

