

# ▶ Pixhawk Mini

Advanced Autonomous  
Vehicle Control



## QUICK START GUIDE





**Pixhawk Mini Autopilot**



**GPS module**



**Quad Power Distribution Board**



(A) **8 channel PWM breakout board**



(B) **4 pin cable**



(C) **RC-in cable**



(D) **6 to 6 pin and 4 pin "Y" cable**



(E) **6 pin cable (2)**



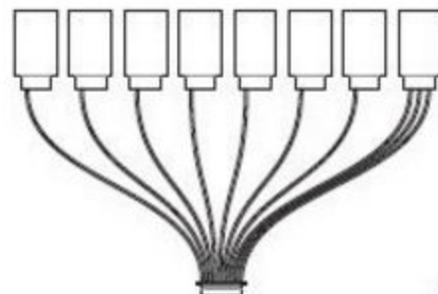
(F) **6 pin JST to DF13**



(G) **Safety switch**



(H) **8 channel PWM breakout cable**



# GETTING STARTED

With the help of PX4 firmware, Pixhawk mini turns any RC plane, copter, or rover into a full-featured personal drone. Once you have a fully assembled vehicle, follow this guide to install Pixhawk mini.

## MOUNT

Use the provided foam pads to mount Pixhawk mini as close as possible to your vehicle's center of gravity. Make sure to orient the board with the arrow pointing forward.

### VEHICLE FRONT



# CONNECT RADIO CONTROL

For PPM Receivers

For Spektrum DSM Receivers



# CONNECT MOTOR OUTPUT



# INSTALL QGroundControl

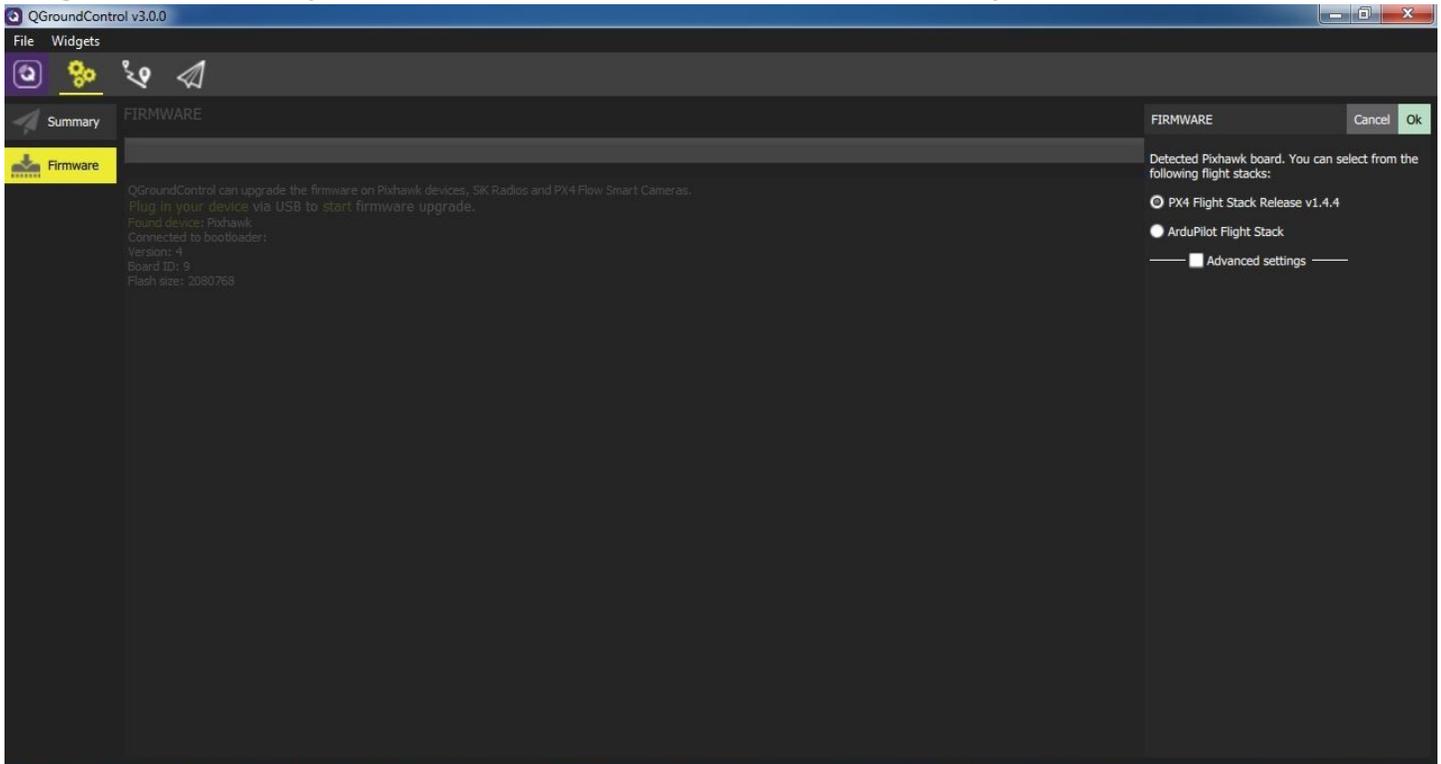
PX4 firmware is the brains of your autopilot and must be installed before using Pixhawk mini. To load firmware onto the Pixhawk mini, install QGroundControl on your computer. QGroundControl is cross platform and available on Windows, OS X, and Linux. Application available for free download from <http://qgroundcontrol.com/>

The screenshot shows the QGroundControl website. At the top, there is a dark purple navigation bar with the QGroundControl logo on the left and the links 'HOME', 'GETTING STARTED', and 'DOWNLOADS' on the right. Below the navigation bar is a large hero image of a mountain range with a 'KNOW THE TOOL' button in the center. Underneath the hero image is a smaller navigation bar with the same links. The main content area is titled 'DOWNLOADS' and contains a paragraph: 'Choose the desired platform to download the latest version of QGroundControl.' Below this paragraph are five columns, each representing a platform: Windows (with a window icon), Mac OS X (with an 'X' icon), Linux (with a smiley face icon), Android (with an Android robot icon), and iOS (with an Apple logo icon). Each column lists the platform name, the minimum system requirements, and a 'GET IT NOW' button.

Platform	System Requirements	Action
WINDOWS	Windows Vista or above	GET IT NOW
MAC OS X	Mac OS X 10.8 or above	GET IT NOW
LINUX	Ubuntu 14.04 LTS or above	GET IT NOW
ANDROID	Android 5.1 or above	GET IT NOW
IOS	iOS 8.0 or above (Beta)	GET IT NOW

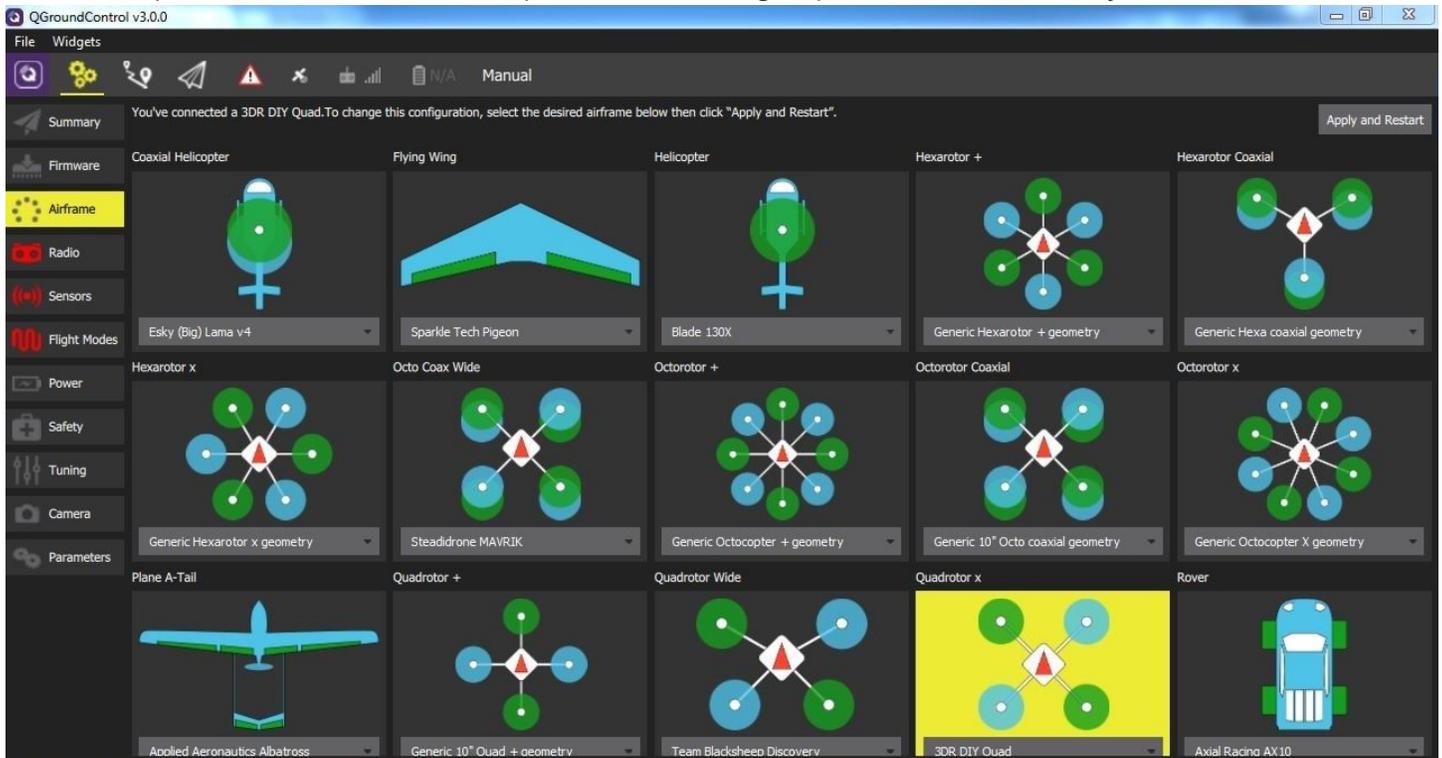
# LOAD FIRMWARE

Using QGroundControl you can install the latest versions of the firmware on your board.



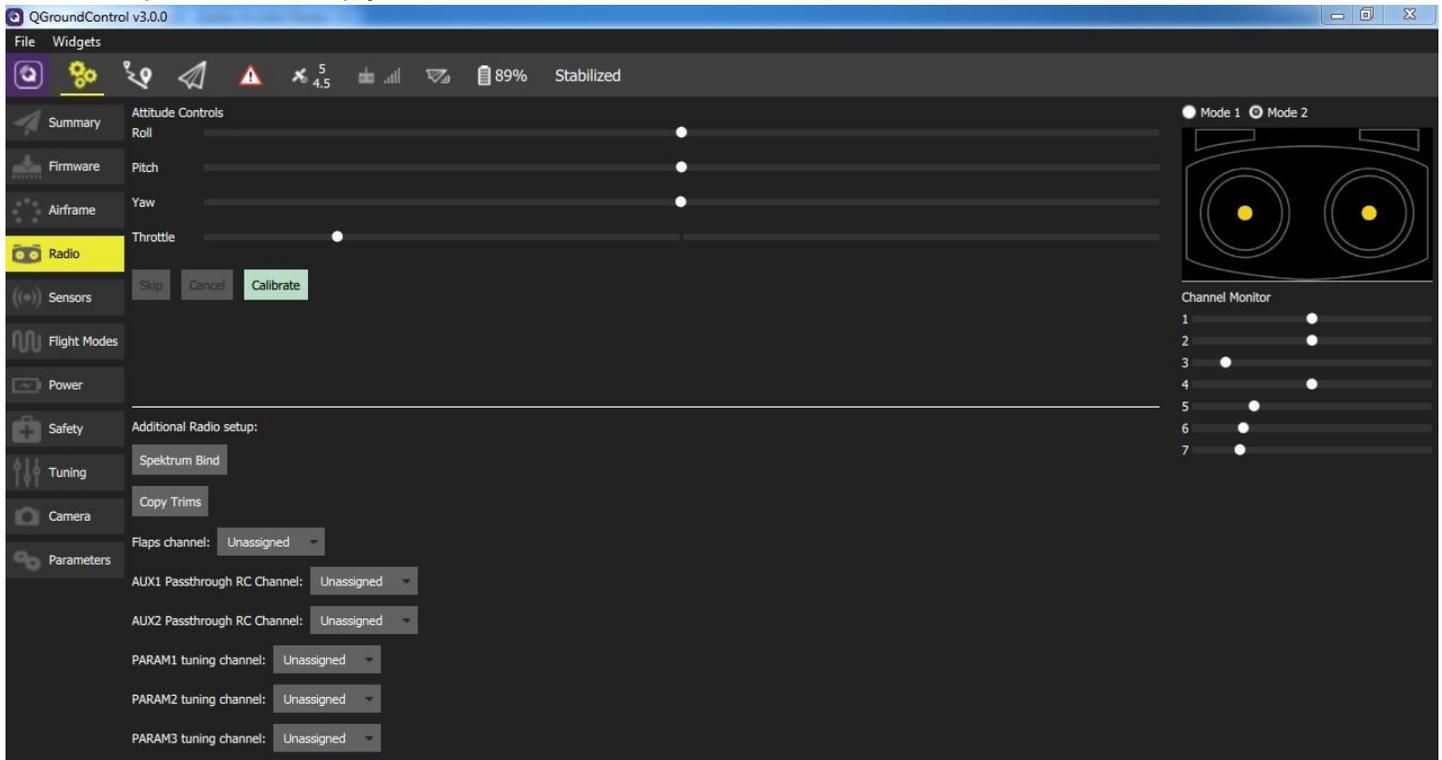
# AIRFRAME

Select the specific airframe from the dropdown within the group which best matches your vehicle.



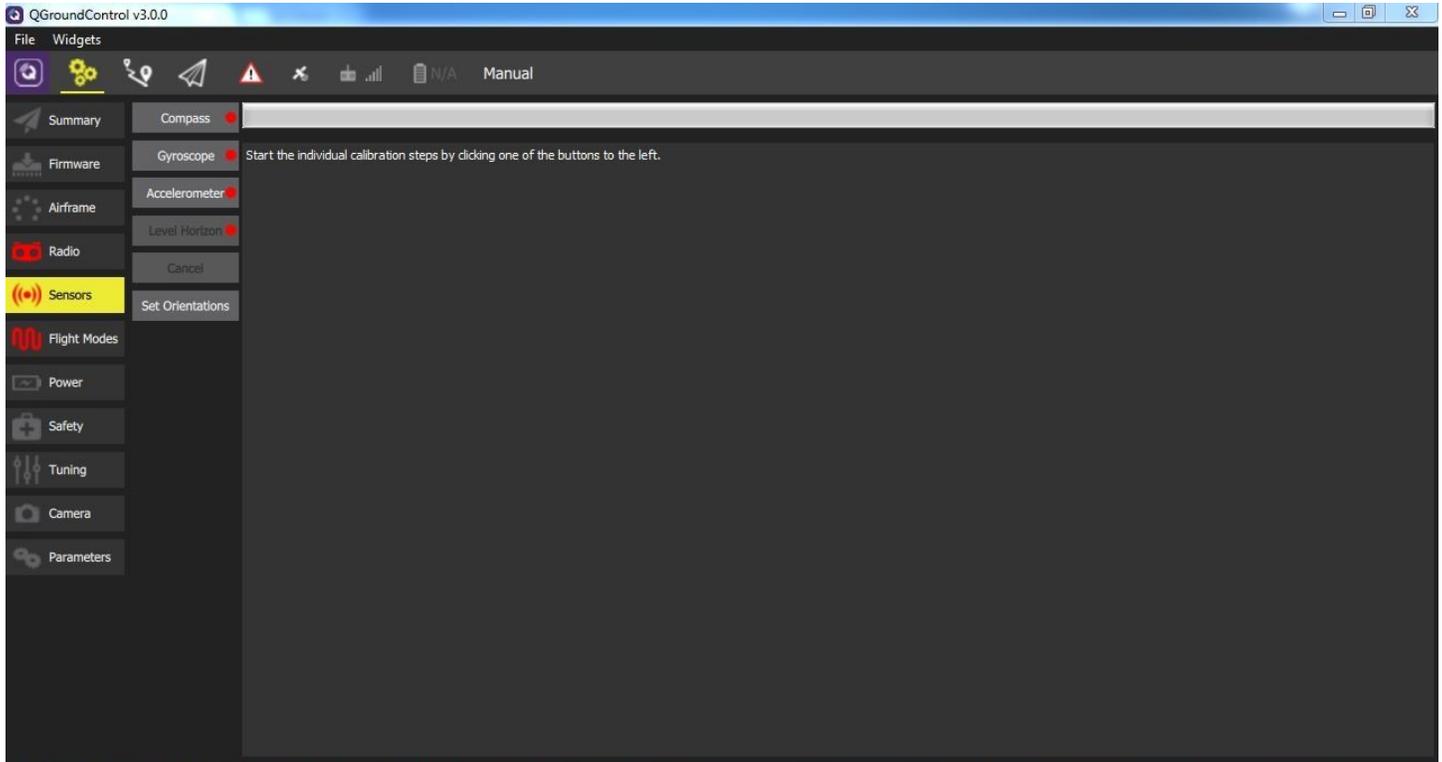
# RADIO

Radio Setup is used to map your main control sticks to channels and set min/max values for these.



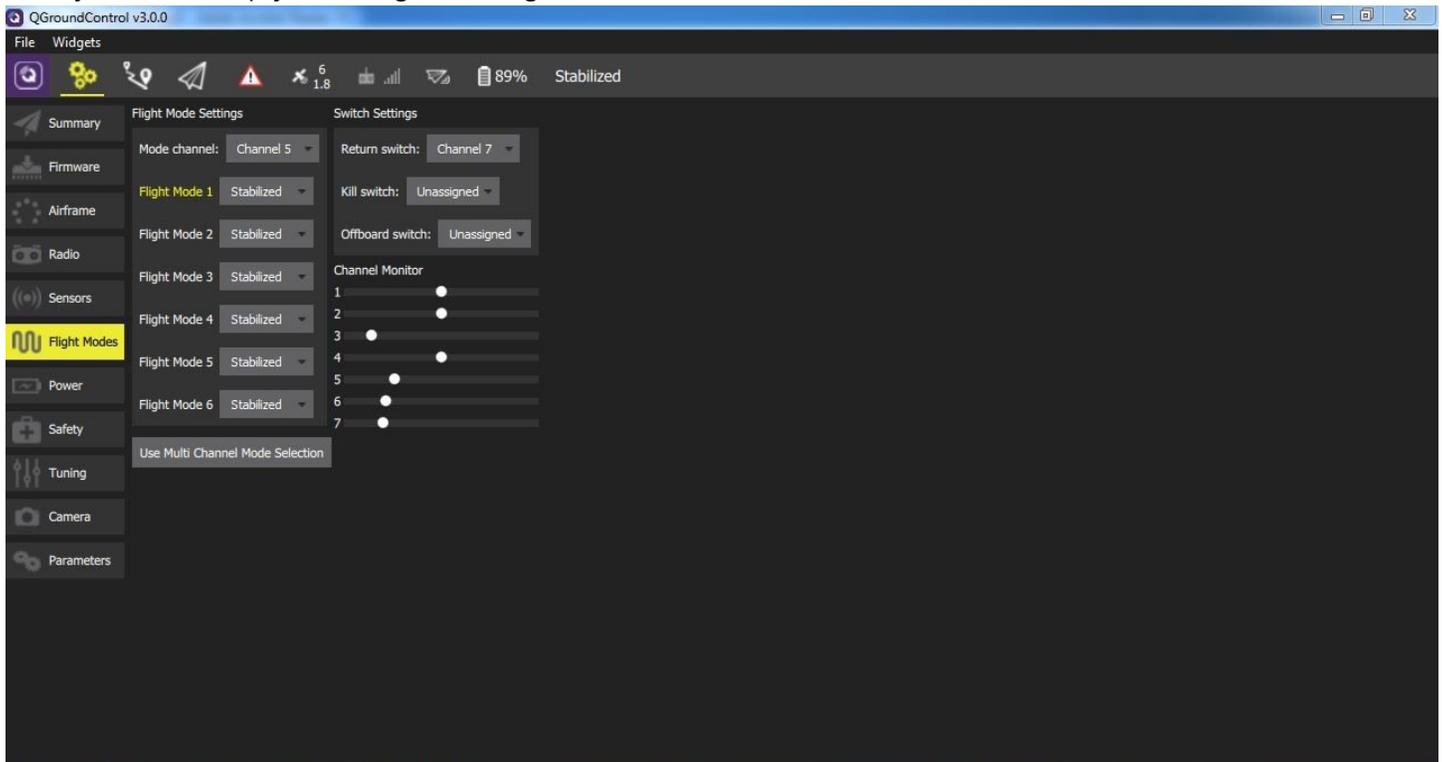
# SENSORS

Sensors marked with red means that something needs to be set up before flight, while marked in green means that is working properly. To start the individual calibration steps, you can click on each sensor's button.



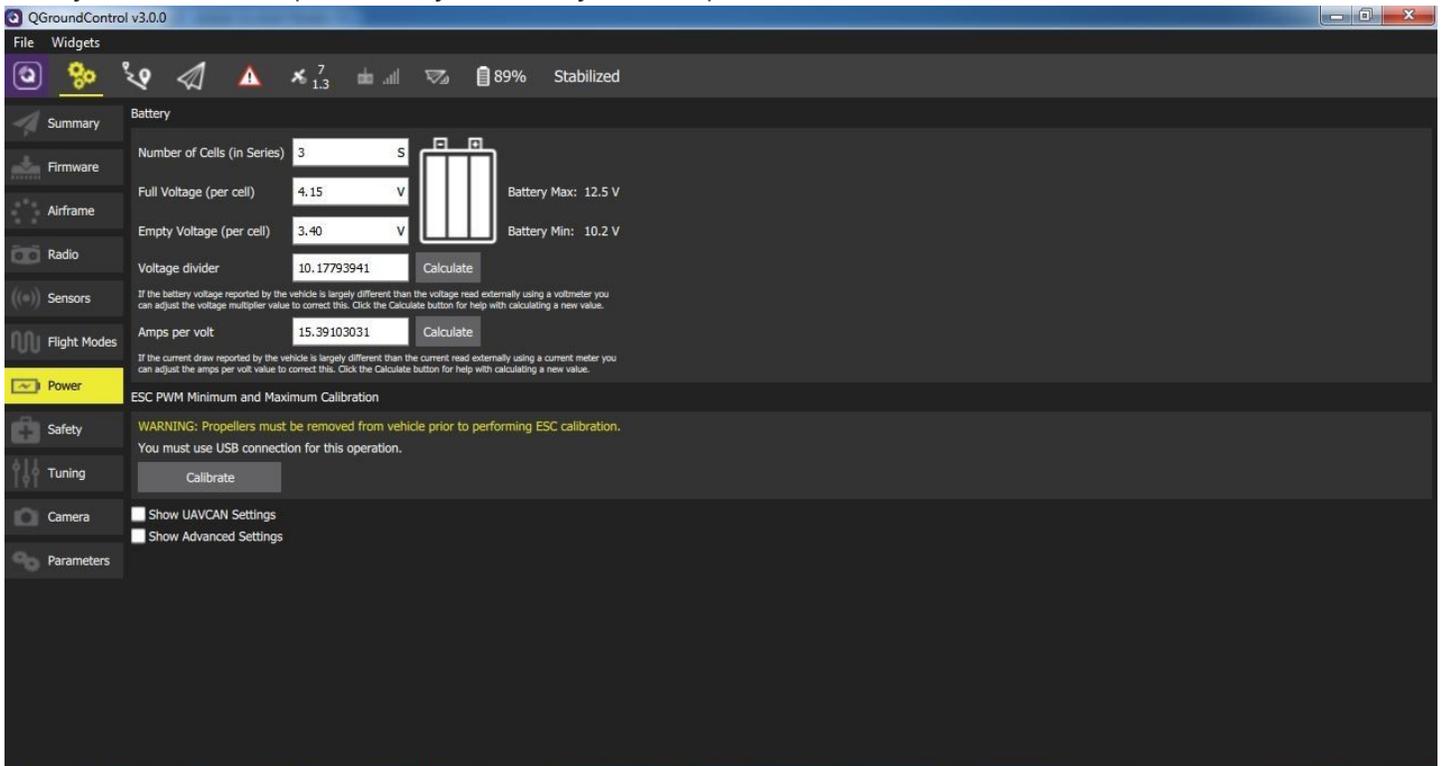
# FLIGHT MODES

Here you can set up your designated Flight Modes.



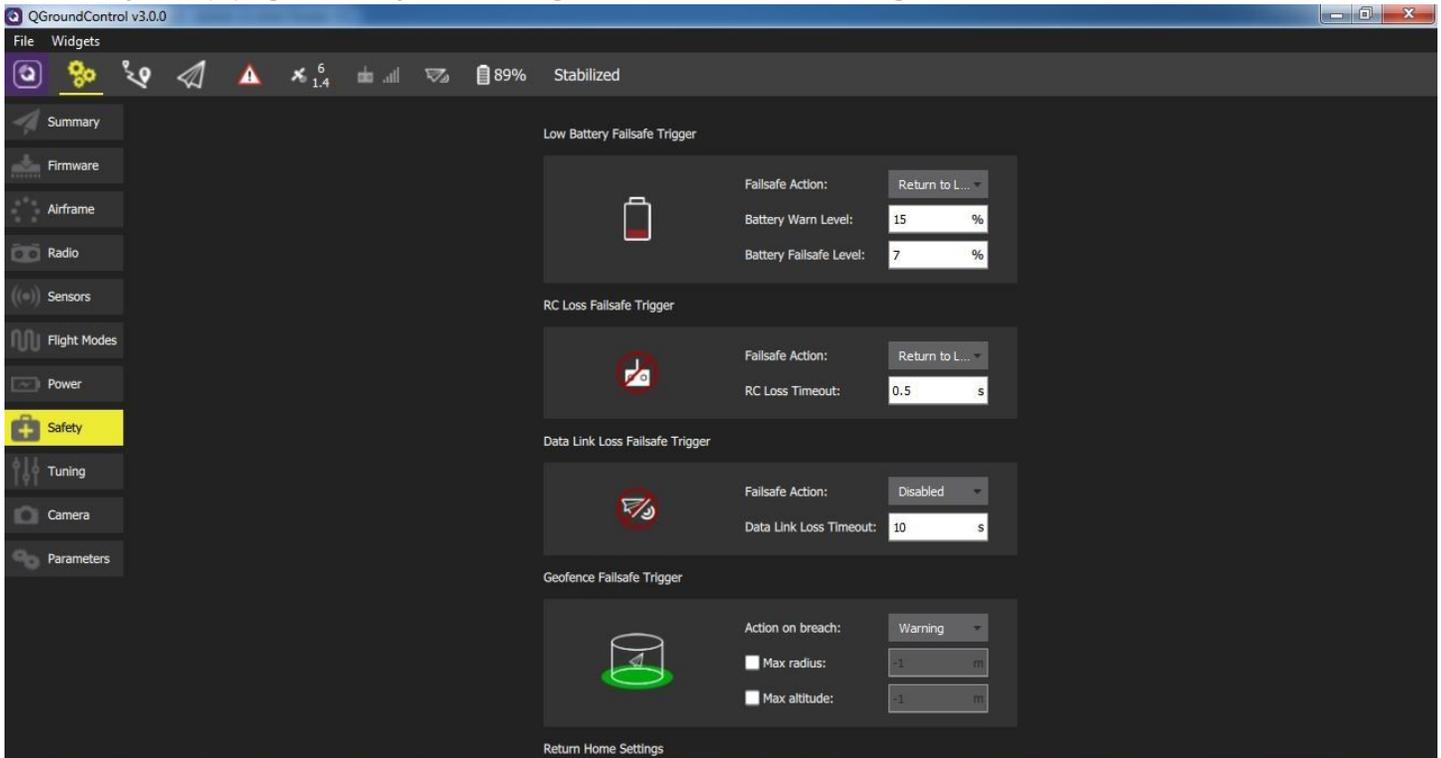
# POWER

Here you can set the specifics of your battery and the power sensor that will be used.



# SAFETY

The Safety Setup page allows you to configure various failsafe settings as well as return home details.



# SPECIFICATIONS

**Main Processor:** STM32F427 Rev 3

**IO Processor:** STM32F103

## **Sensors**

Accel/Gyro/Mag: MPU9250

Accel/Gyro: ICM20608

Barometer: MS5611

## **Voltage Ratings:**

Power module output: 4.1~5.5V

Max input voltage: 45V (10S LiPo)

Max current sensing: 90A

USB Power Input: 4.1~5.5V

Servo Rail Input: 0~10V

**Dimensions:** 38x43x12mm

Weight: 15.8g

**GPS Module:** GNSS receiver: ublox Neo-M8N; **compass** HMC5983

Weight: 22.4g

Dimensions: 37x37x12mm

## **Interface:**

1 x UART Serial Port

Spektrum DSM/DSM2/DSM-X® Satellite Compatible

Futaba S BUS® Compatible

PPM Sum Signal Input

I2C

CAN

ADC

Internal Micro USB Port

# OPTIONAL ACCESSORIES

Digital Airspeed sensor + Pitot tube (MS525DO)

Standard Telemetry (433MHz and 915MHz)

WiFi Telemetry (2.4GHz WiFi Radio)

# PIN OUTS

Custom installations may require custom made cables.

Here's a handy description of all Pixhawk Mini's connectors and what they do. Just in case...

## TELEM PORT

1 (red)	VCC	+5V
2 (blk)	TX1 (OUT)	+3.3V
3 (blk)	RX1 (IN)	+3.3V
4 (blk)	GND	GND

## CAN PORT

1 (red)	VCC	+5V
2 (blk)	CAN-H	+3.3V
3 (blk)	CAN-L	+3.3V
4 (blk)	GND	GND

## SAFETY SWITCH PORT

1 (red)	VCC	+5V
2 (blk)	IO_LED_SAFETY	GND
3 (blk)	SAFETY	GND

## GPS & I2C PORT

1 (red)	SCL	+3.3V
2 (blk)	SDA	+3.3V
3 (blk)	VCC	+5V
4 (blk)	TX3	+3.3V
5 (blk)	RX3	+3.3V
6 (blk)	GND	GND

## POWER INPUT PORT

1 (red)	SCL	+3.3V
2 (blk)	SDA	+3.3V
3 (blk)	VCC	+5V
4 (blk)	TX3	+3.3V
5 (blk)	RX3	+3.3V
6 (blk)	GND	GND

## CHANNEL PIN OUTS

PIN	Multiroto	4 Channel Planes	Rovers
Pin 1	Motor 1	Aileron	-
Pin 2	Motor 2	Elevator	-
Pin 3	Motor 3	Throttle	Throttle
Pin 4	Motor 4	Rudder	Steering
Pin 5	Motor 5	-	-
Pin 6	Motor 6	-	-
Pin 7	Motor 7	-	-
Pin 8	Motor 8	-	-

For planes with configurations other than 4 channels, see [px4.io](http://px4.io) for more information.

## ADDITIONAL INFORMATION

Be sure to visit [http://px4.io/](http://px4.io) for further information including tutorials, configurations, and community support.