



Advanced Autonomous Vehicle Control

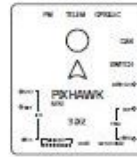


QUICK START GUIDE



PARTS

Pixhawk Mini Autopilot



GPS module



Quad Power Distribution Board



8 channel PWM breakout board



4 pin cable



RC-in cable



6 to 6 pin and 4 pin "Y" cable



6 pin cable (2)



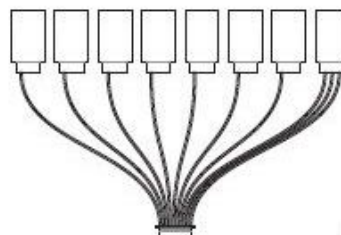
6 pin JST to DF13



Safety switch



8 channel PWM breakout cable



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)



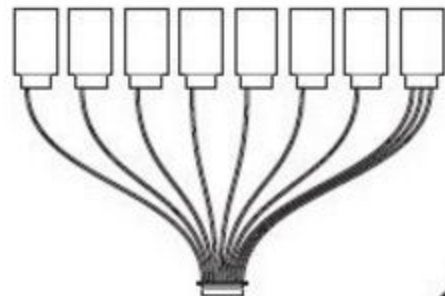
(F) 6 pin JST to DF13



(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



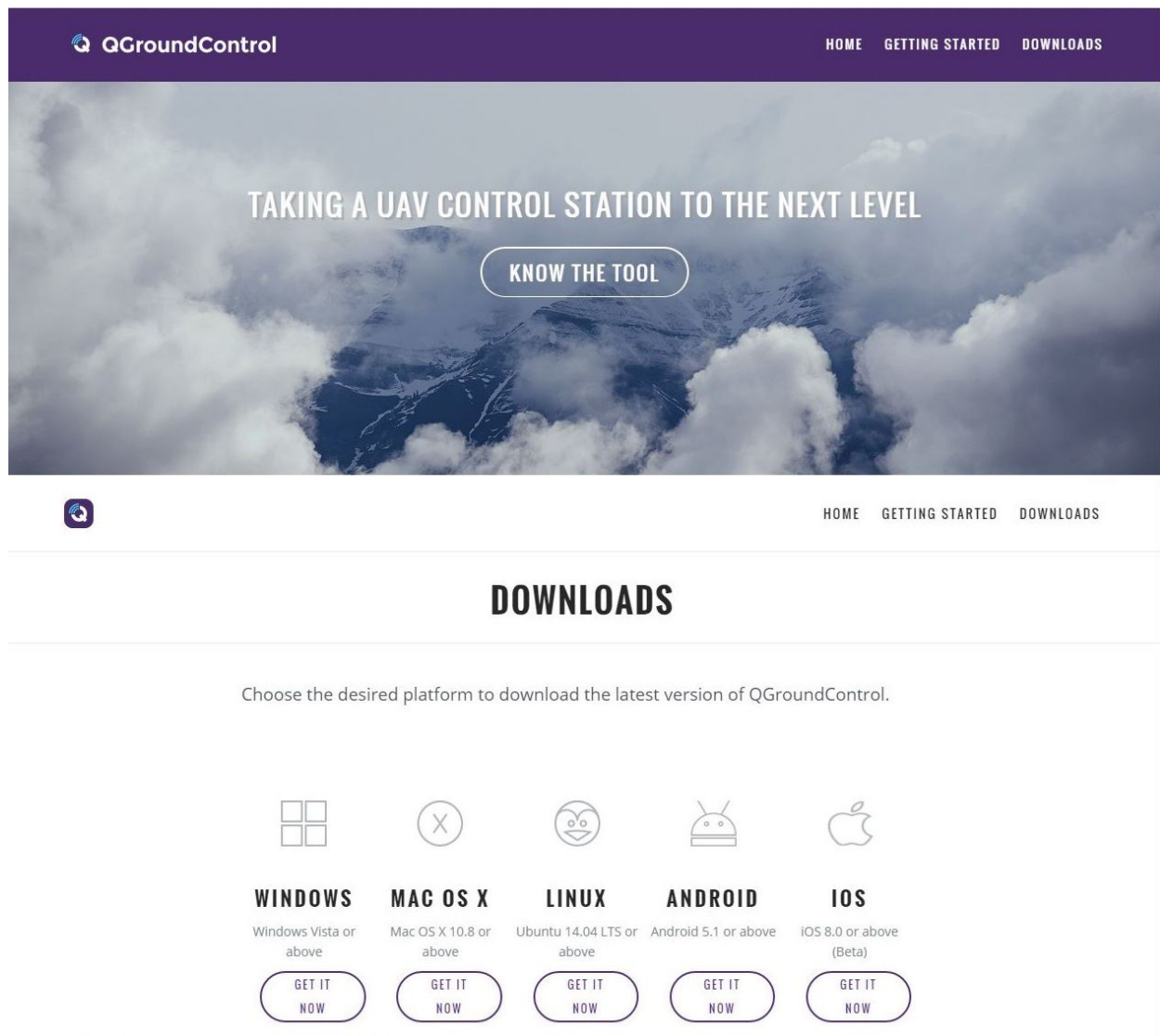
INSTALL QGroundControl

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/>

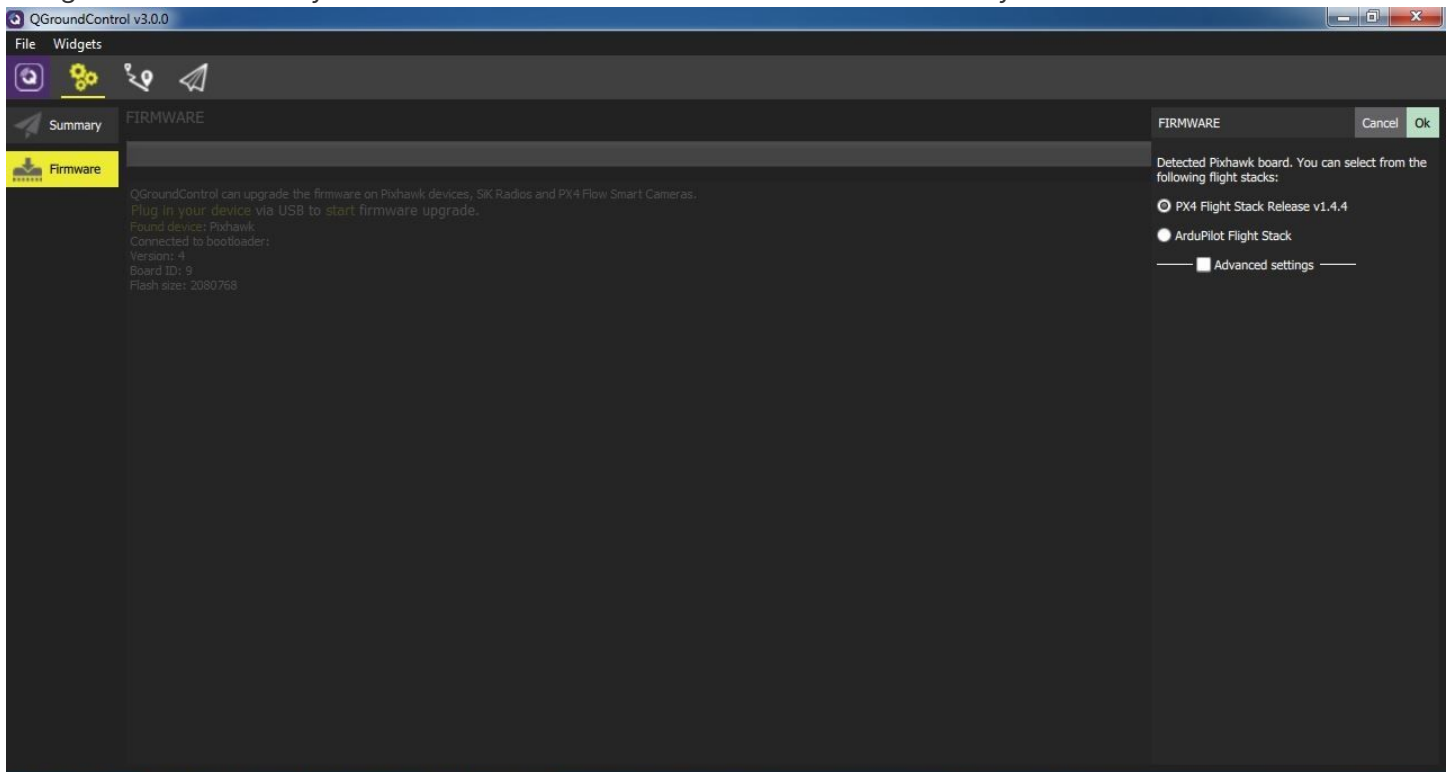


The screenshot shows the QGroundControl website. The top navigation bar is dark purple with the QGroundControl logo and links for HOME, GETTING STARTED, and DOWNLOADS. The main banner features a mountain landscape with the text "TAKING A UAV CONTROL STATION TO THE NEXT LEVEL" and a "KNOW THE TOOL" button. Below the banner is a "DOWNLOADS" section with the instruction "Choose the desired platform to download the latest version of QGroundControl." Five platform options are listed: WINDOWS, MAC OS X, LINUX, ANDROID, and IOS. Each option includes an icon, the platform name, the minimum system requirements, and a "GET IT NOW" button.

Platform	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

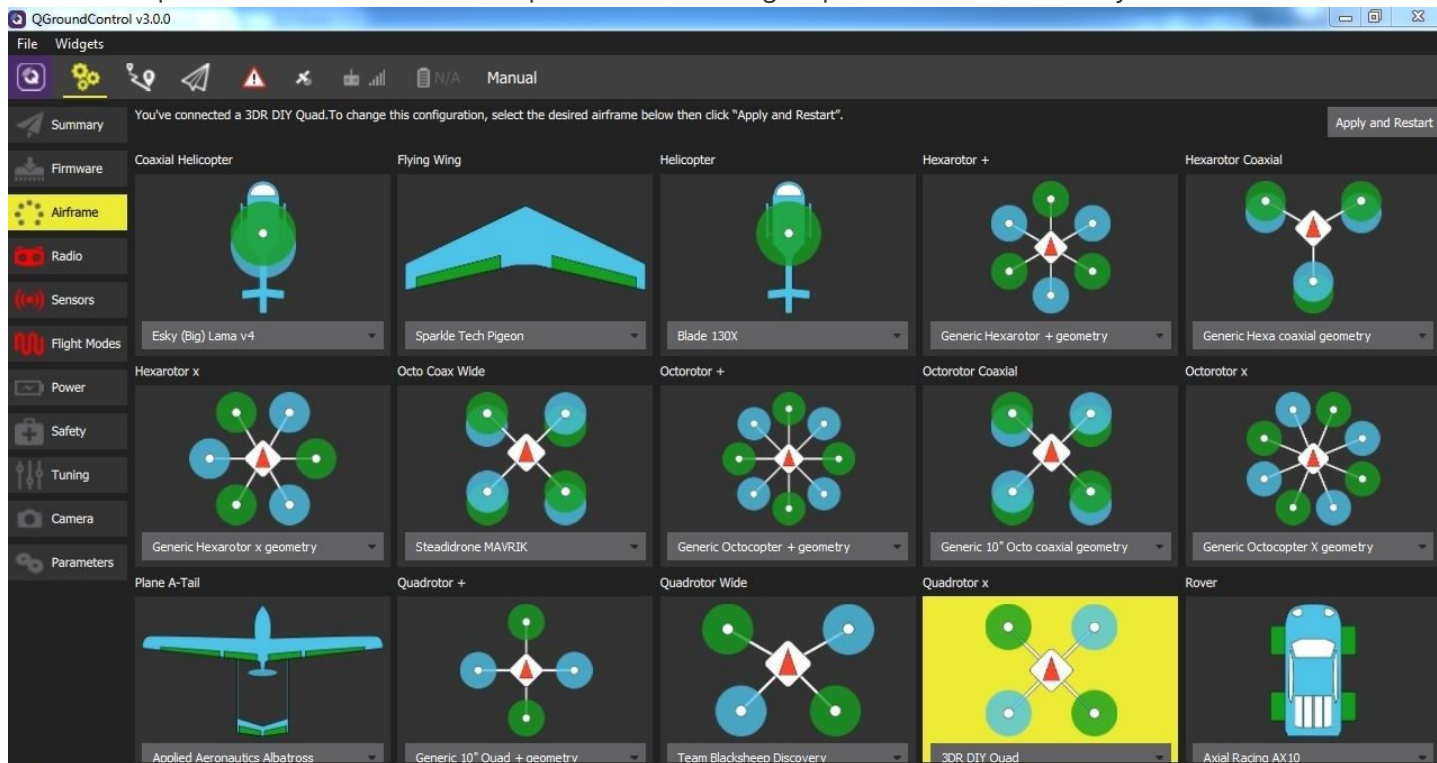
LOAD FIRMWARE

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



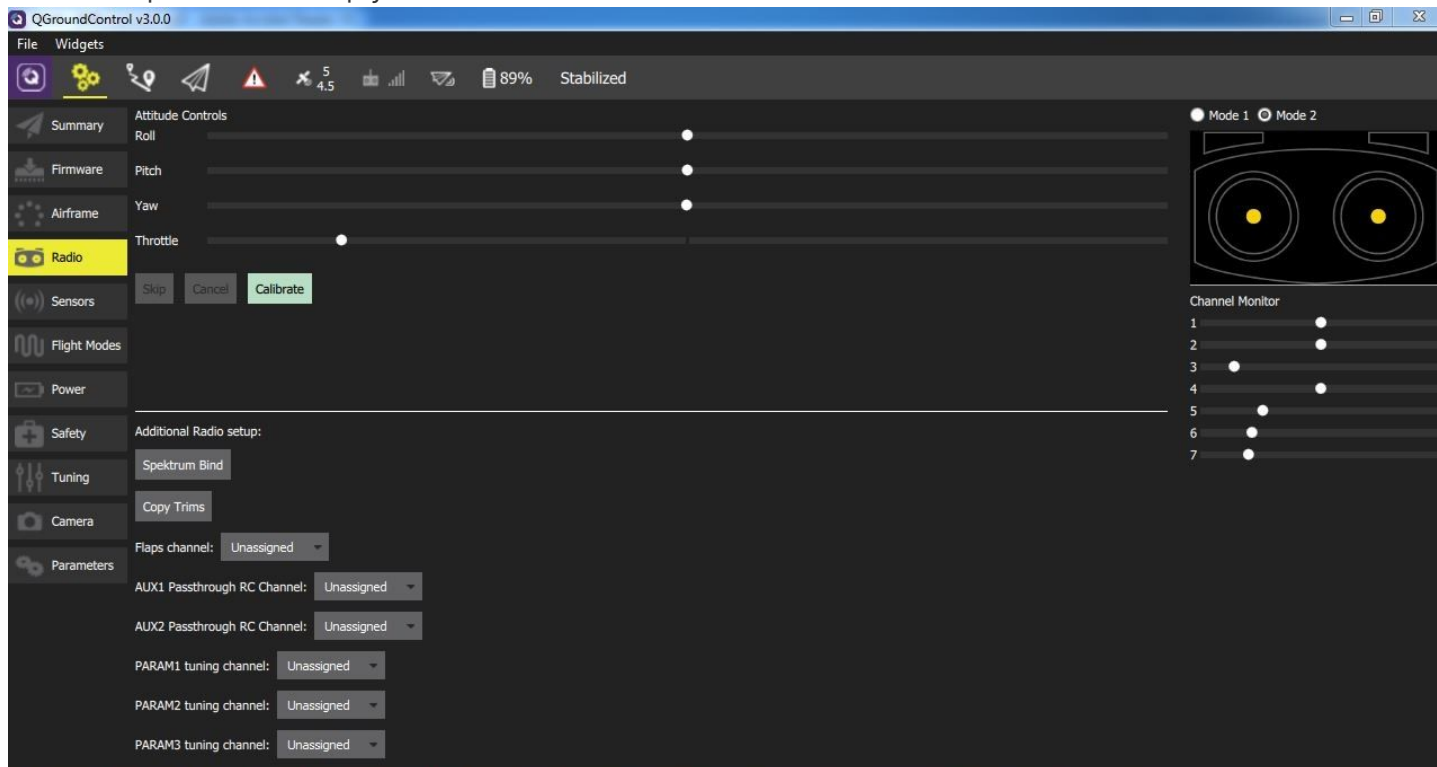
AIRFRAME

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



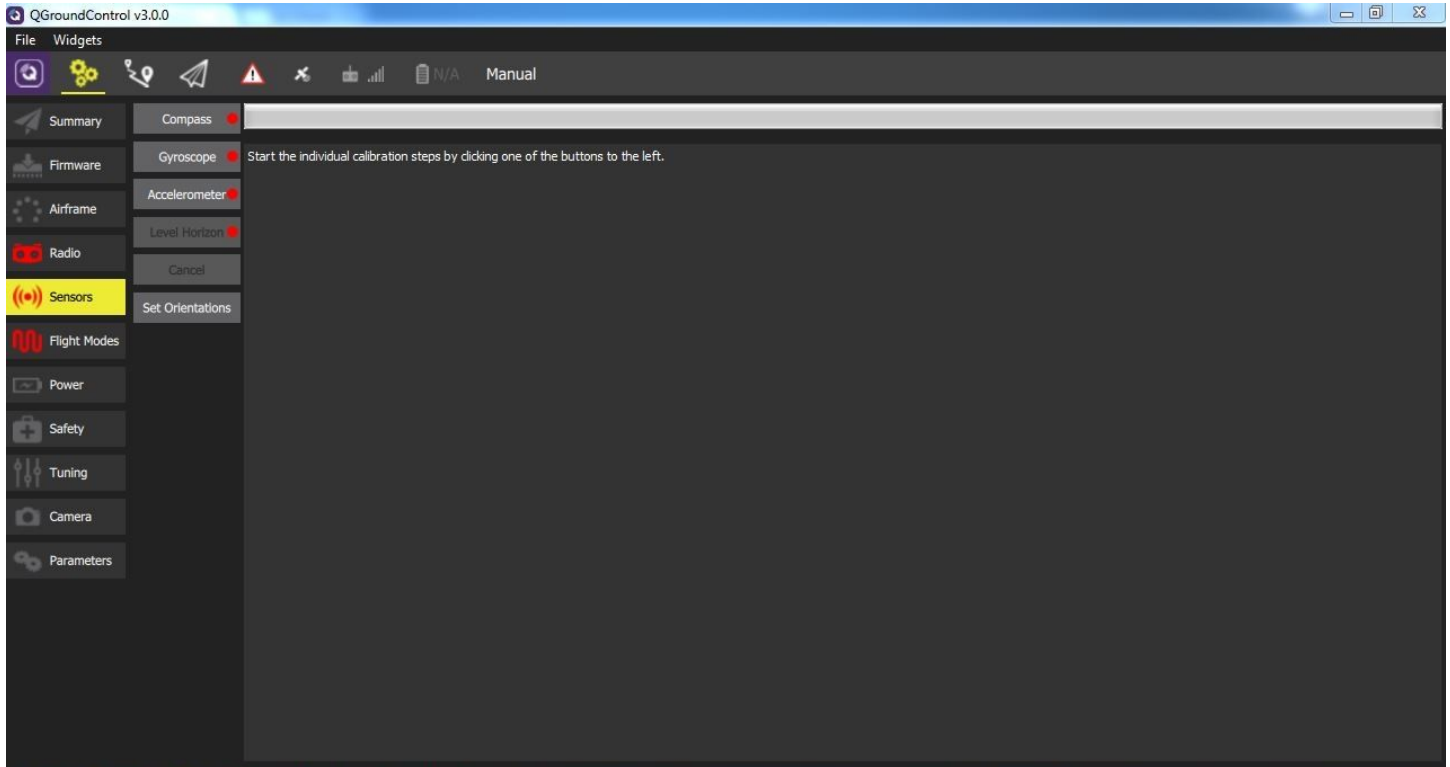
RADIO

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



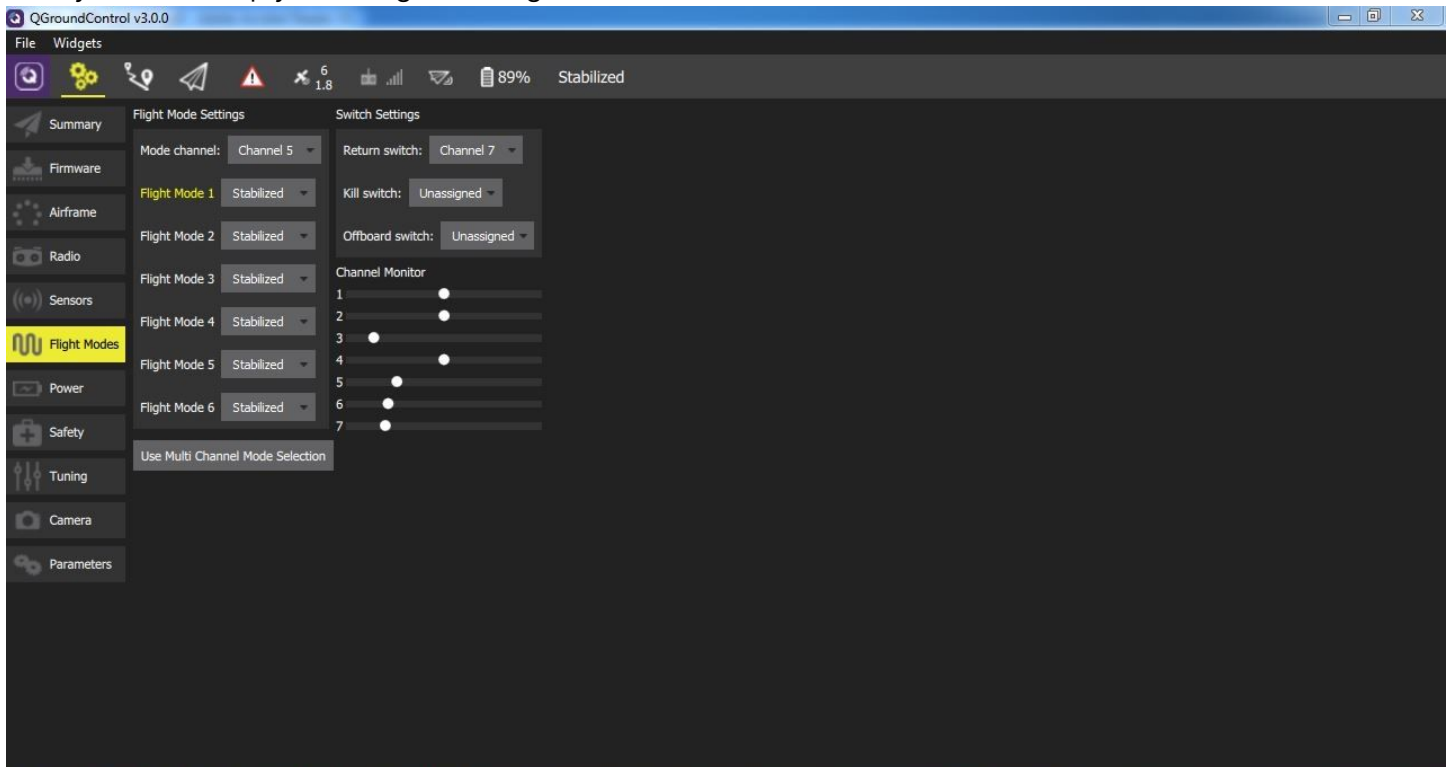
SENSORS

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.



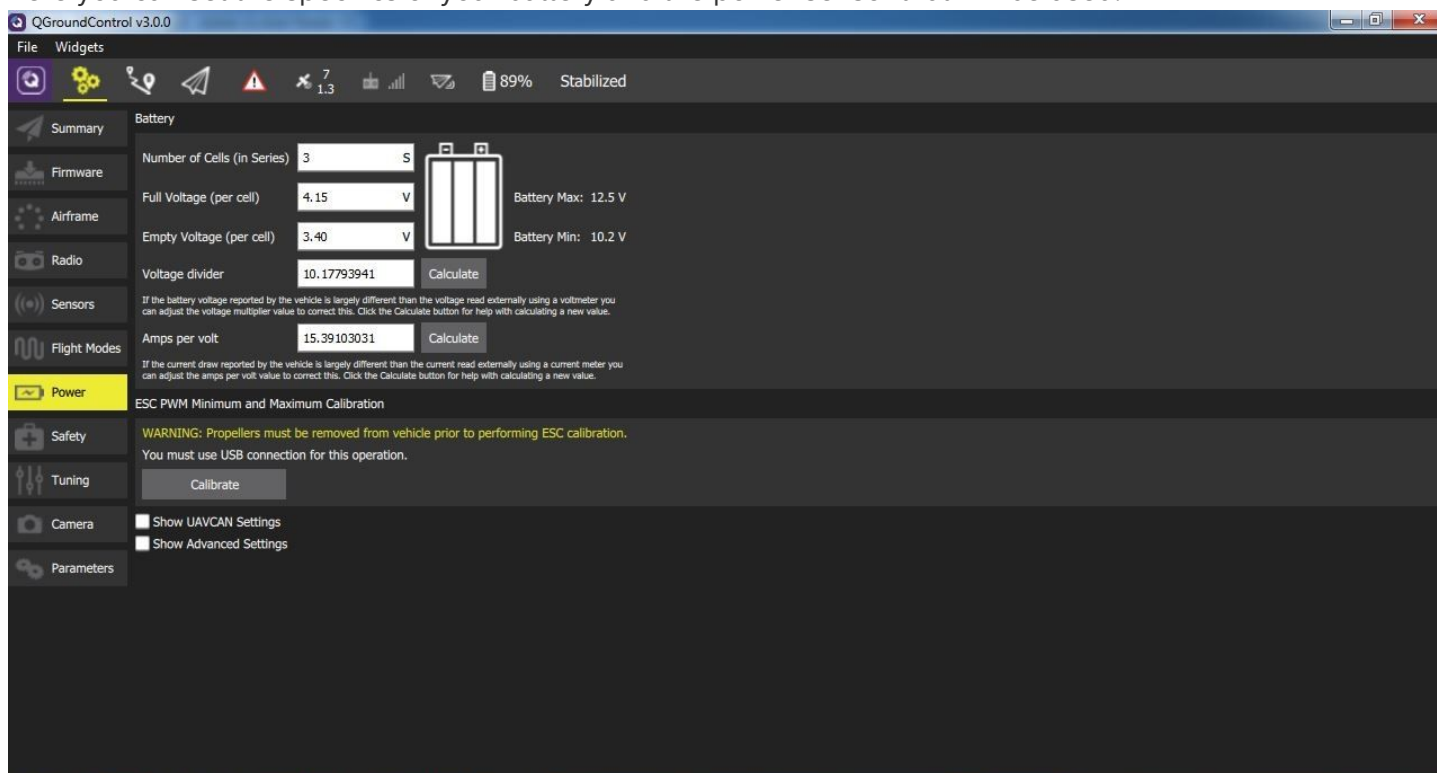
FLIGHT MODES

Here you can set up your designated Flight Modes.



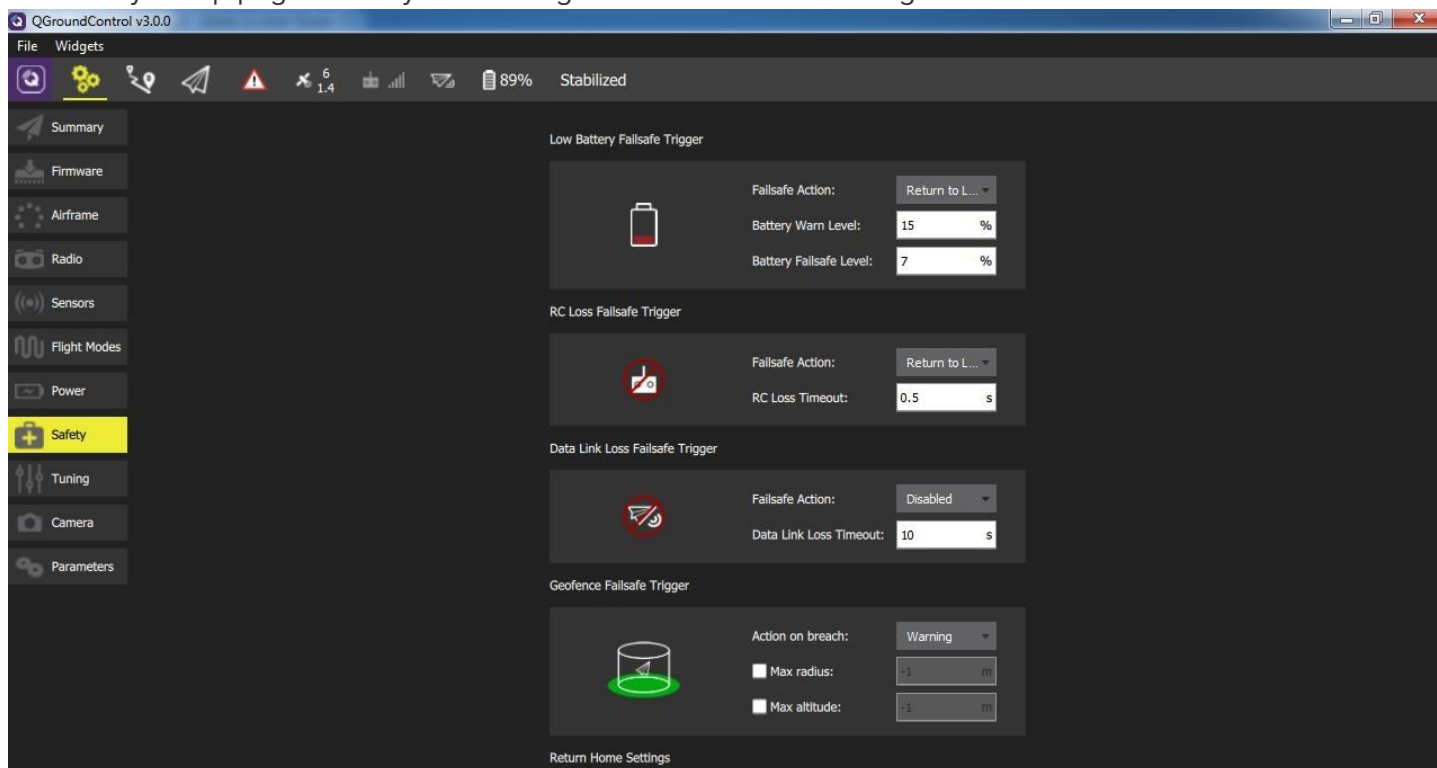
POWER

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	Multirobot	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 for more information.

ADDITIONAL INFORMATION

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