

pixhawk2 AUTOPILOT

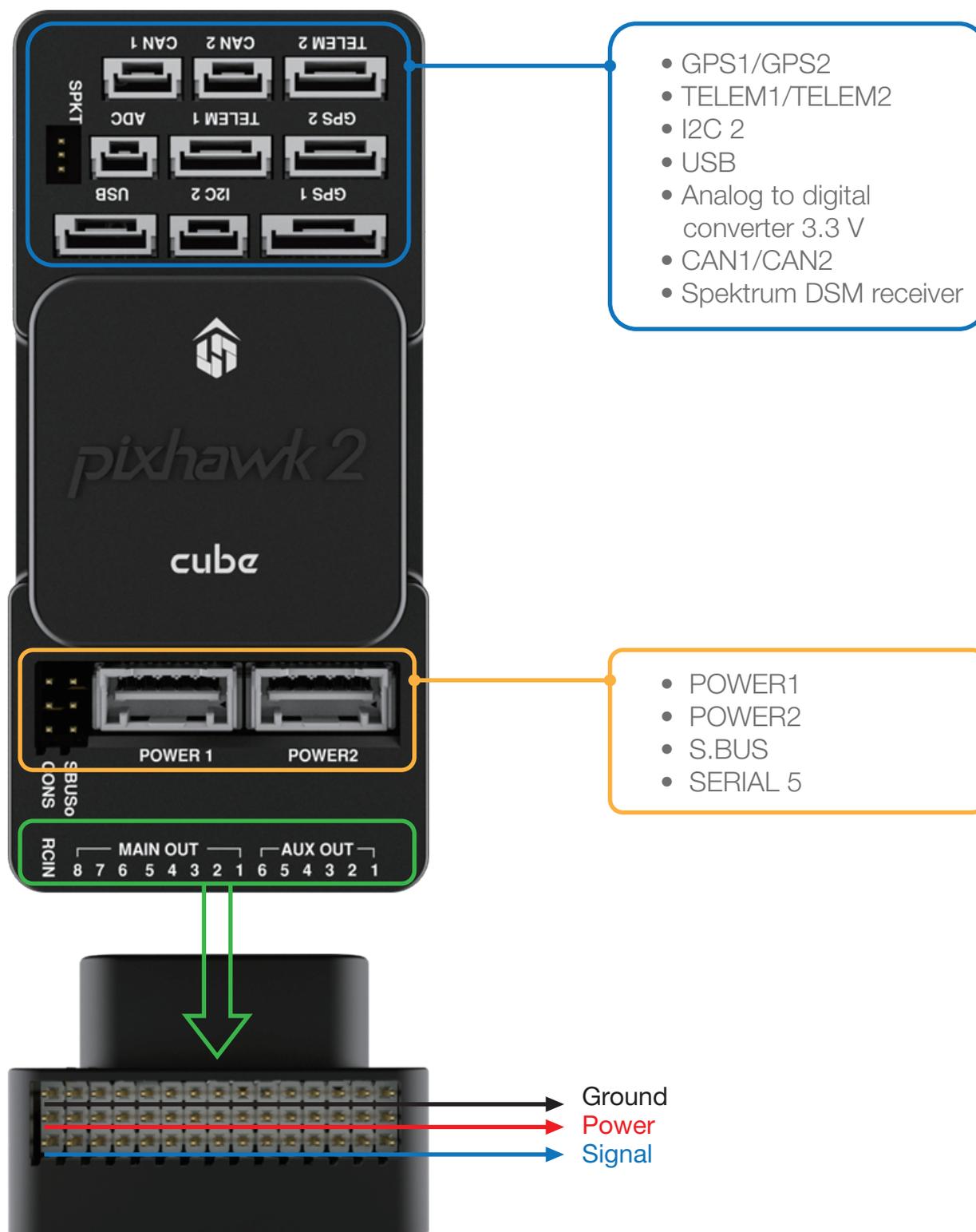


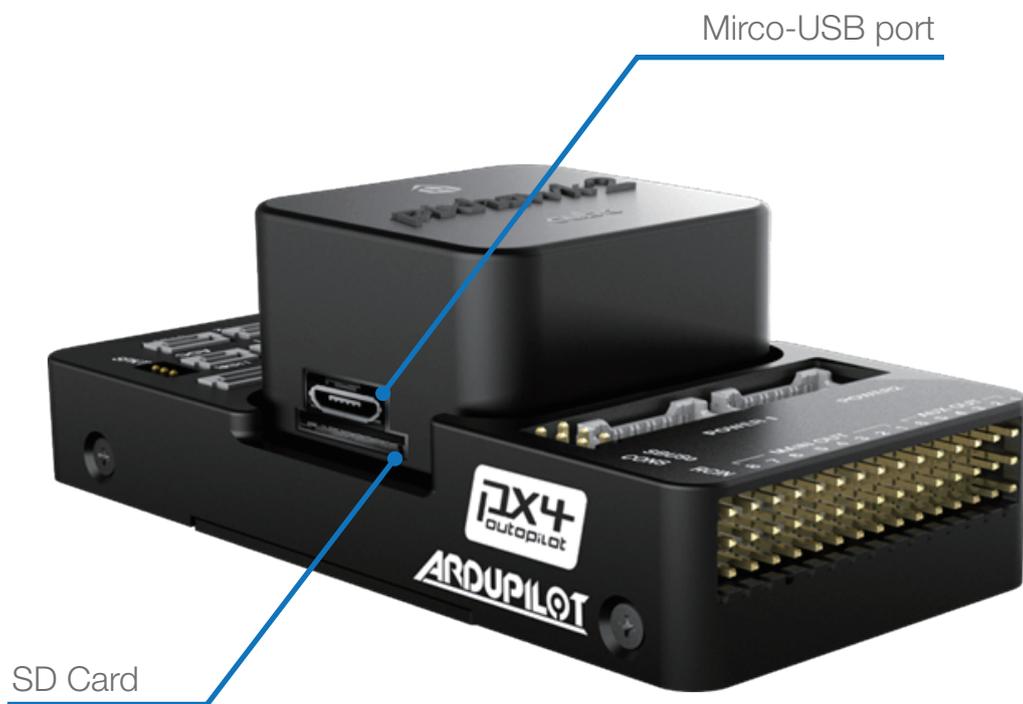
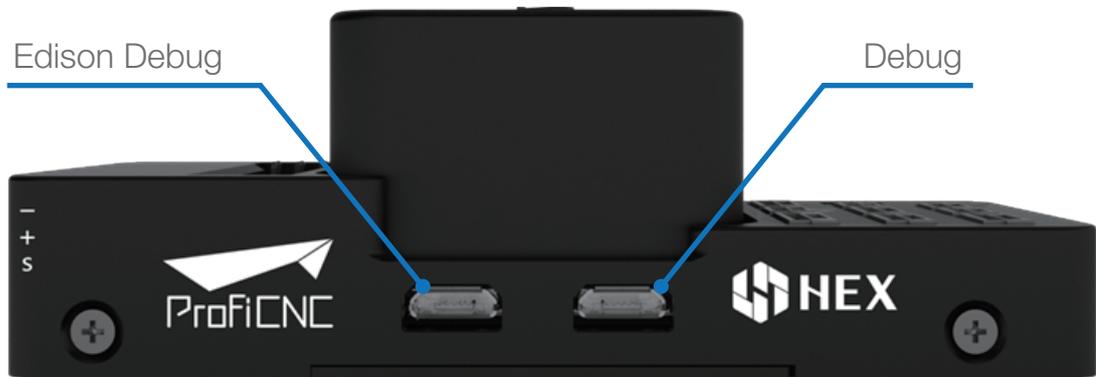
QUICK START GUIDE



The view of PIXHAWK2.1

Ports:





PIXHAWK2.1 and Accessories



- 1 PIXHAWK2.1 board with SD card
- 2 Buzzer
- 3 Safety switch
- 4 SD card USB adapter

- 5 Micro-USB cable
- 6 Power module
- 7 6-wire cable x2
- 8 Mounting foam

GETTING STARTED

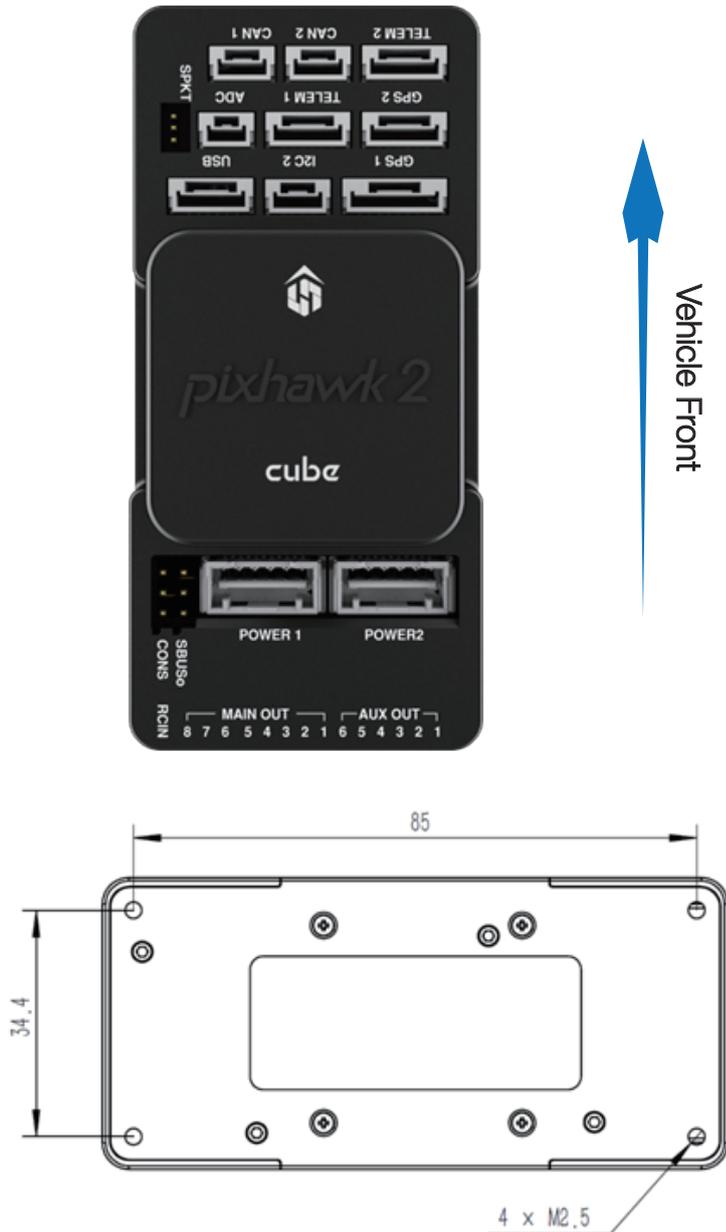
PIXHAWK2.1 is the latest iteration of Pixhawk, which is an independent, open-hardware project. Aiming at providing high-end autopilot hardware to the academic, hobby and industrial communities at low costs and high availability! With the help of APM firmware, PIXHAWK2.1 turns any RC plane, copter, or rover into a full-featured personal drone. Once you have a fully-assembled frame, follow this guide to install PIXHAWK2.1.

- I. Mount
- II. Connect
- III. Load firmware
- IV. Calibrate



I.MOUNT

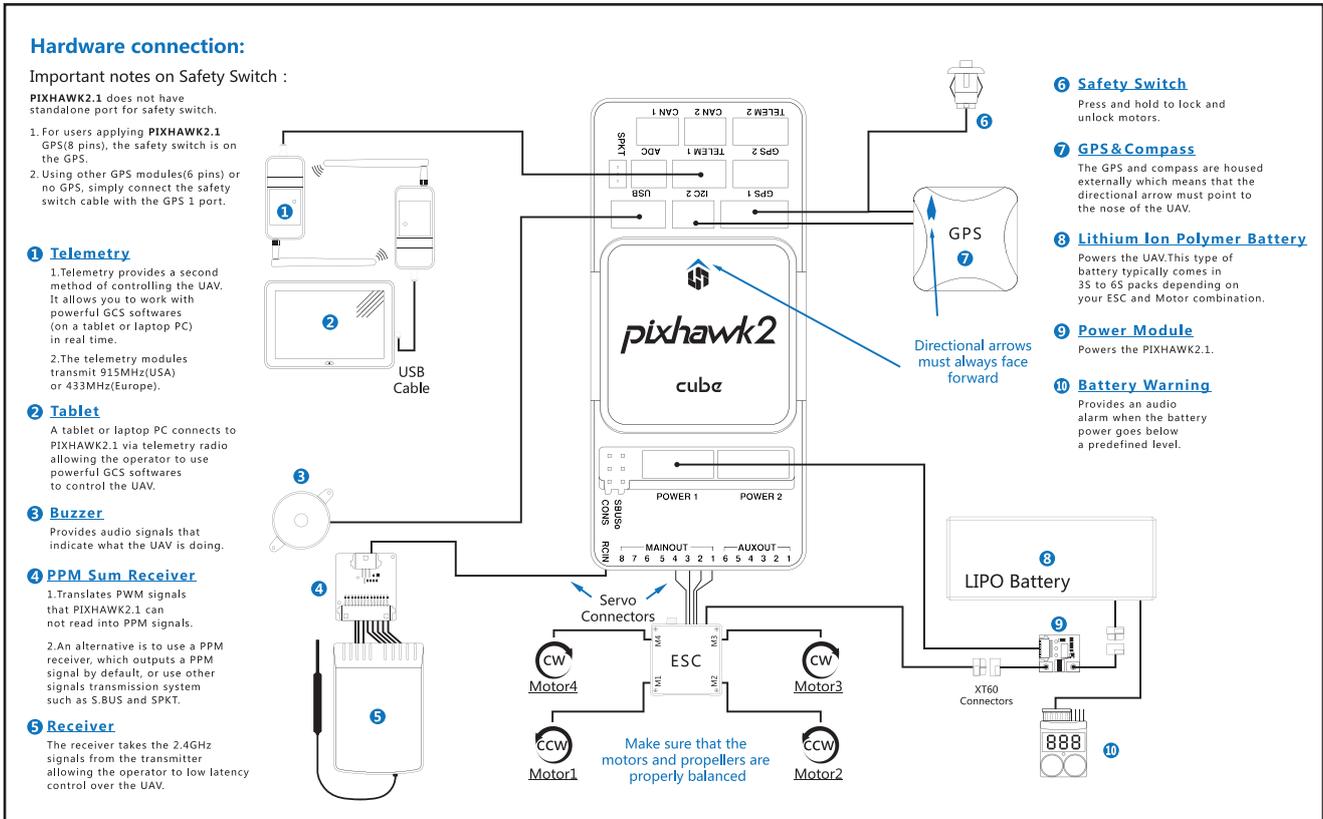
Use the provided foam or mounting screws to mount PIXHAWK2.1 as close as possible to your vehicle's center of gravity. Make sure to orient the board with the arrow pointing forward.



For screw-method, mounting screws in PIXHAWK2.1 accessories are designed for 1.8mm thick frameboard. Customized screws are supposed to be M2.5 with thread length inside PIXHAWK2.1 in range 6mm~7.55mm.



II.CONNECT



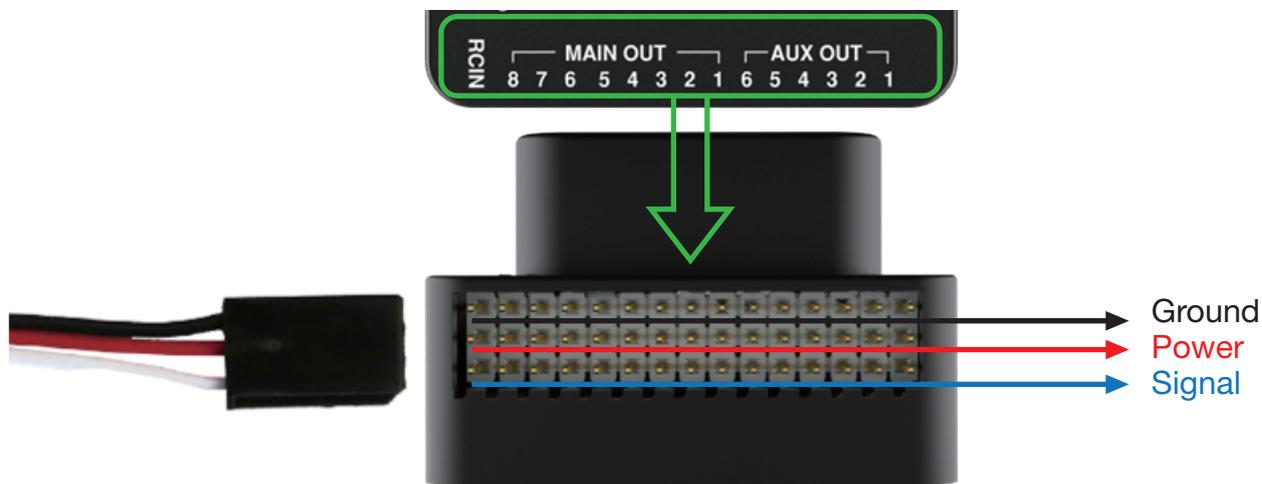
Load SD card into the PIXHAWK2.1 Cube

If the SD card is not preloaded into Cube, insert the Micro-SD card into the slot of the Cube.



CONNECT RADIO CONTROL

For PPM RC receivers and Futaba S.Bus receivers



Connect the ground(-),power(+),and signal(S) wires to the RC pins using the provided 3-wire servo cable.

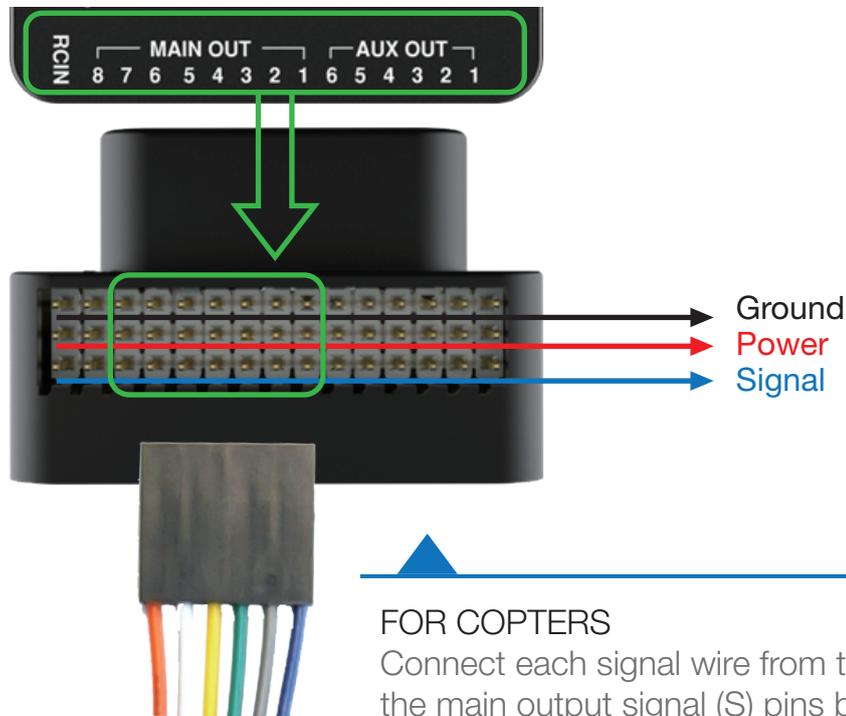
FOR SPEKTRUM SATELLITE RECEIVERS

For a Spektrum DSM, DSM2, or DSM-X Satellite RC receiver, connect to the SPKT/DSM port.



FOR PWM RECEIVERS

Purchase a PPM Encoder module to connect a PWM RC receiver to PIXHAWK2.1 at hex.aero or proficnc.com



FOR COPTERS

Connect each signal wire from the PDB to the main output signal (S) pins by motor number. Connect one wire for each motor to the corresponding pin.

Pin 1 = Motor 1 Pin 5 = Motor 5
 Pin 2 = Motor 2 Pin 6 = Motor 6
 Pin 3 = Motor 3 Pin 7 = Motor 7
 Pin 4 = Motor 4 Pin 8 = Motor 8

FOR PLANES

For planes, connect the control channel wires to the main output signal pins.

Pin 1 = Aileron
 Pin 2 = Elevator
 Pin 3 = Throttle
 Pin 4 = Rudder

FOR ROVERS

For rovers, connect the throttle and steering wires to the main output signal pins.

Pin 3 = Throttle
 Pin 4 = Steering



III.LOAD FIRMWARE

APM firmware is the brains of your autopilot operation and must be installed before using PIXHAWK2.1.

To load firmware onto PIXHAWK2.1, install a mission planner application on your ground station computer. Choose either Mission Planner (Windows) or APM Planner for (Windows, OS X, and Linux).

Both applications are available for free download from ardupilot.com.



Mission planner



Download [Mission Planner](#) (Windows)

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MissionPlanner

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Select latest MSI to download the most recent version.





Download [APM Planner](#) (Mac & Linux)

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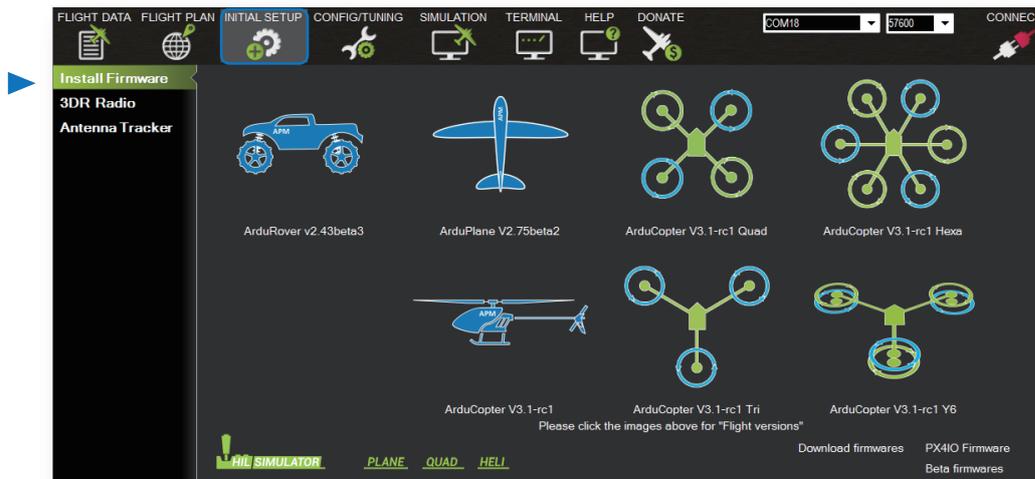
Select DMG for Mac and RPM for Linux.

INSTALL PLANNER

After selecting the correct file, read the safety information and select Download. Open the file to run the setup wizard. Proceed through any security warnings, and install all suggested drivers. When the installation is complete, open the application, and connect PIXHAWK2.1 to your computer using the micro-USB cable. Your computer will automatically install the correct drivers, Do not select at this time. PIXHAWK2.1 can only load firmware while unconnected to Mavlink.



Select [Initial Setup](#), [Install Firmware](#), and select your Vehicle.



When prompted, follow the directions to load the firmware. Once the status bar shows that the download is complete, power cycle the board by disconnecting and reconnecting the USB.

If you hear a musical tone, your firmware installation is complete. If you hear a series of tones followed by three beeps, disconnect the USB and reconnect while holding down the safety button. Upon restart, listen for a series of tones followed by two beeps indicating that your firmware has loaded successfully.

IV. CALIBRATE

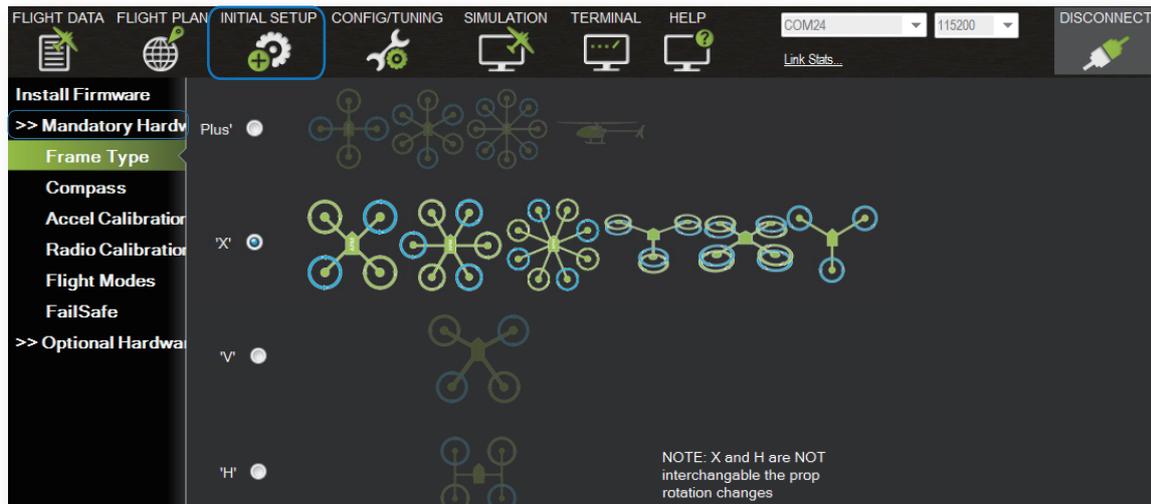
With PIXHAWK2.1 connected to your computer, select the communication option from the drop-down menu for PX4 FMU, set the rate to 115200, and select the Connect icon. Select Initial Setup and Mandatory Hardware to access the calibration wizards.



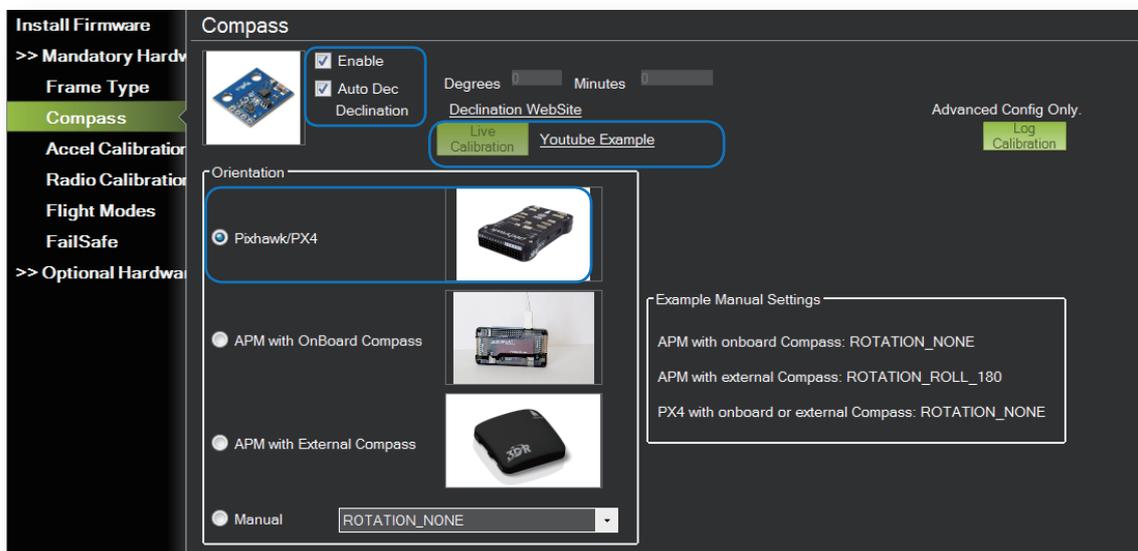
Remove propellers before performing calibration!



SELECT FRAME TYPE(COPER ONLY)



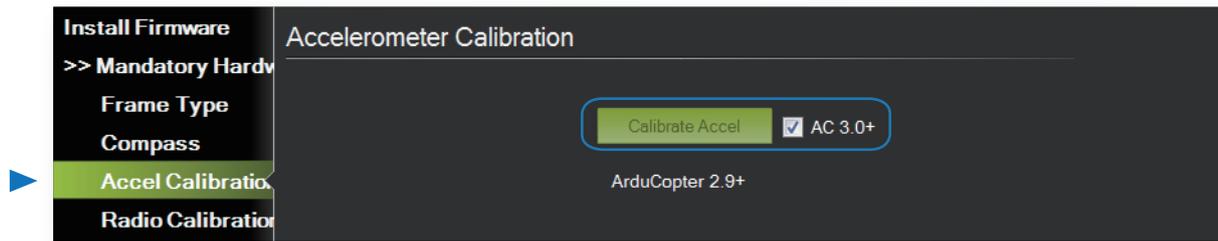
CALIBRATE COMPASS



Select the options to enable the compass; to allow automatic declination calculation; and to specify PIXHAWK2.1. Select [Live Calibration](#) to launch the wizard, and follow the prompts.



CALIBRATE ACCELEROMETER



Select [Accel Calibration](#), check the box for AC 3.0+, select [Calibrate](#), and follow the prompts to calibrate PIXHAWK2.1's accelerometer. Make sure to wait a couple of seconds before and after changing the positions of the vehicle.

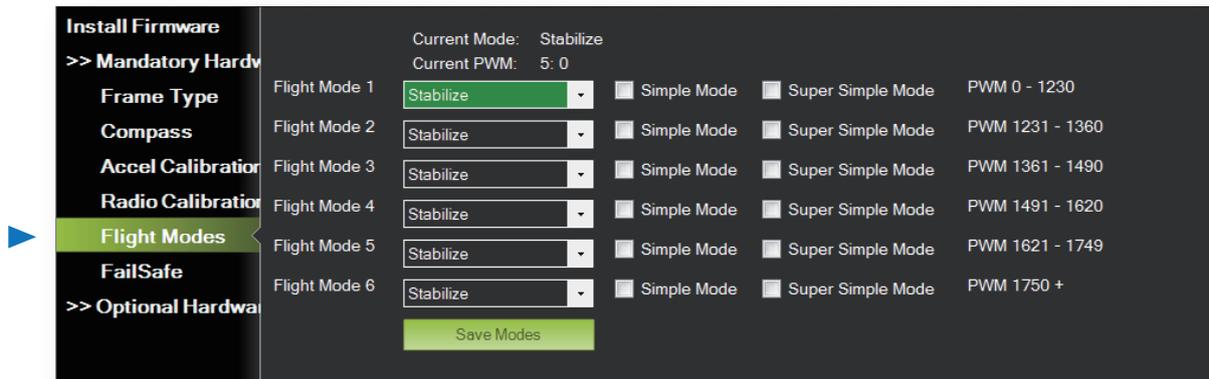
RC CALIBRATION



Select [Radio Calibration](#) to teach PIXHAWK2.1 to work with your RC transmitter. Turn on your transmitter, select [Calibration Radio](#), and move all sticks and switches to their extreme positions. Select [Click when Done](#) once the red bars are set for all available channels.



SELECT FLIGHT MODES



Move each switch on your transmitter to its available positions. The mission planner will indicate the currently selected position with green highlighting. Select a mode for each switch position, and select Save Modes to assign.

Calibrate ESC

Please refer to <http://ardupilot.org/copter/docs/esc-calibration.html>

Finish

Your flight is ready to go now!

Important Notes:

PIXHAWK2.1 integrates safety switch along with standard GPS. If you haven't bought the GPS. Please plug the safety switch into the GPS 1 port in order to fly.

