



Aurelia X4

User Manual

Rev 4

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1. Disclaimers

- I. If your order includes customization, the devices and equipment installed in your Aurelia, as well as its programming, may differ from the ones mentioned in this manual.
- II. The safety measures suggested in this manual do not cover every possible danger scenario, being aware of all the possible risks of handling and operating Unmanned Aerial Vehicles and parts related to them is responsibility of the owner and operator of the Aurelia.
- III. This manual doesn't contemplate international regulations for Unmanned Aerial Vehicles, knowing these regulations is responsibility of the owner and operator of the Aurelia.
- IV. UAV Systems International is not responsible for any damages occurred to any of its products after delivery.
- V. UAV Systems International is not responsible for any malfunctions derived from any change to the default settings of the Aurelia or any of its components and accessories.

2. About your Aurelia

Thank you for purchasing our Aurelia heavy payload quadcopter! Inside this manual, you will find very important information about the Aurelia, that you should know before your first flight. Please, take your time to read it thoroughly before your first flight.

The Aurelia is a powerful multicopter with four rotors, capable of lifting up to 3.3 lb (1.5 kg) and flying for up to 25 minutes.



The Aurelia comes equipped with an ArduPilot compatible Flight Controller, high accuracy GNSS module and the transmitter of your preference; you can review the options we handle in [section 5.1, page 13](#).

The Aurelia features a micro-USB port for programming and communication, a safety button that disables the motors, and a buzzer for sound alarms.

In addition, the Aurelia frame is constructed almost entirely of carbon fiber and aluminum, making it lightweight and resistant, and its four-arms fold for easy storage and transportation; the landing gear has a clearance of 7.5in (19 cm) above the ground, providing ample space for many kinds of payloads.

You are now the owner of a beautiful piece of technology; we're sure you will enjoy working with it just as much as we enjoyed making it.

2.1 Export Compliance

Aurelia Aerospace seeks to conduct business with the highest standards of integrity and compliance with applicable laws and regulations. To ensure our products stay out of the hands of foreign adversaries, we do not permit operation of our aircraft in, or re-exportation of our aircraft to any of the following countries under any circumstance - Belarus, Cote d'Ivoire, Cuba, Democratic Republic of the Congo, Iran, Iraq, Lebanon, Libya, Myanmar, North Korea, Russia, Somalia, Sudan, and Syria.

3. Safety first

UAVs (Unmanned Aerial Vehicles) sure are a lot of fun, but please, always keep in mind that they are not toys; safety measures must be taken before, during, and after each flight, in order to avoid accidents that might harm people, animals and property nearby; or damage/destroy your UAV.

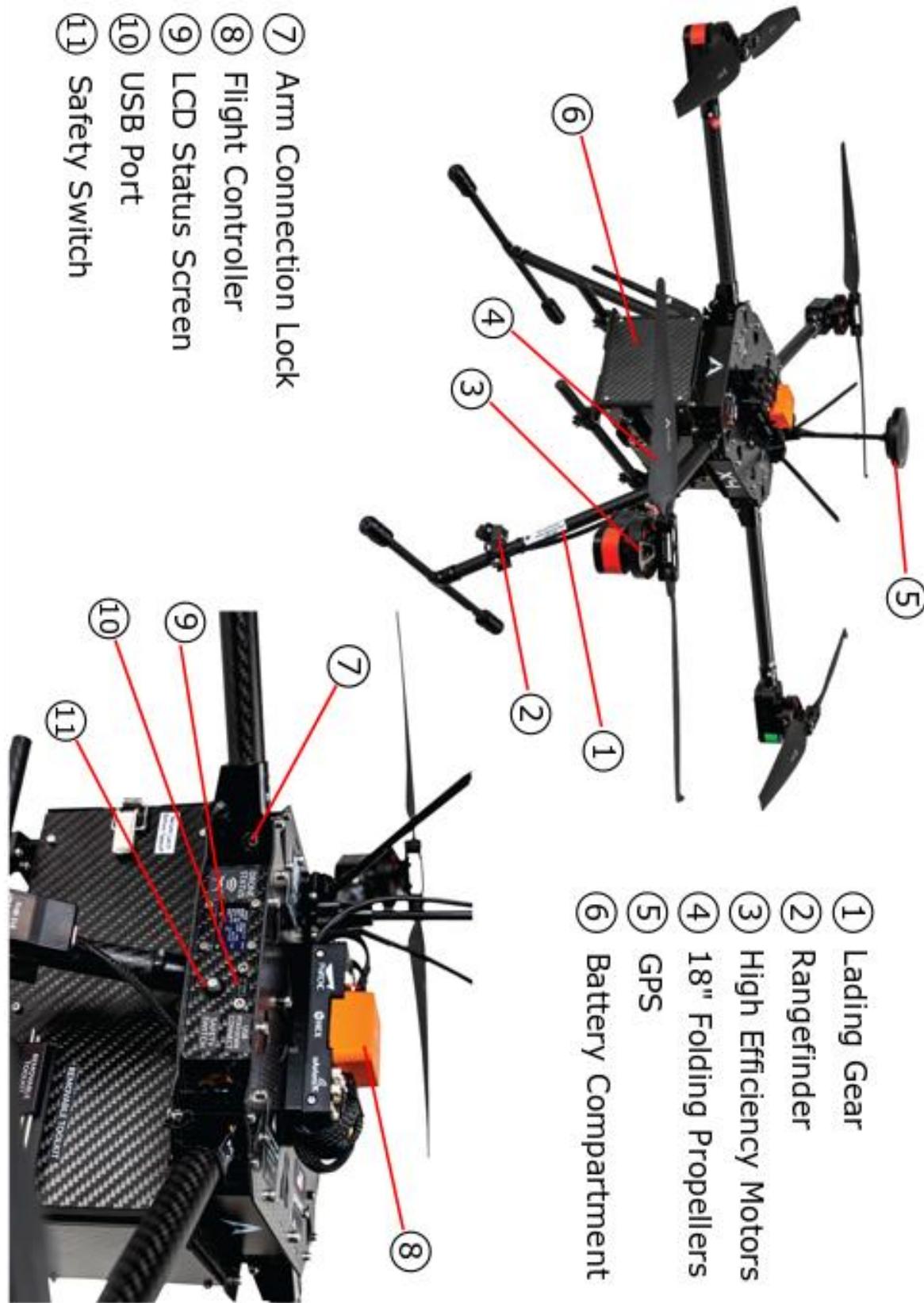
You must read this user manual in its entirety before flying your Aurelia.

Aurelia Aerospace offers a one-time Initial Support session, we recommend you to use the Meta Glasses as you will be able to have a call with our Technical Support team while we monitor the flight from your point of view.

Each section of this manual explains the procedures while taking safety into account; However, here's a list of the most general safety measures you must keep in mind at all times.

1. **Pilot skills.** Don't fly the UAV if you didn't receive the proper training, or let anyone else fly it without proper training. In addition, never drink and fly.
2. **Take it slow.** As exciting as it can be putting your Aurelia's capabilities to the test, it can be dangerous for you and the people nearby. Start slow, get familiar with the vehicle's response to the transmitter and the flight modes before trying your stunts. If you're unfamiliar with flying a UAV, you should purchase a smaller trainer drone and practice with it.
3. **Tighten the screws.** UAVs, especially multicopters, vibrate while flying, which can cause the screws to get lose over time. Before flying, make sure there are no lose screws or nuts; if any are found, tighten them using the correct screwdriver or wrench.
4. **Charge your batteries.** Taking off without fully charging your batteries first is extremely irresponsible and very likely to end in a crash. Never fly your UAV unless you're sure all your batteries and transmitter are charged. Always put your safety and others before anything else.
5. **Know your vehicle.** Each UAV is different so it is very important that you read the manual before taking off; make sure you understand what type of UAV it is, its operational limits and what behavior you should expect from it.
6. **Location.** Different UAVs are suited for flying in different conditions, in addition, depending on the country, the fly zones might be regulated by the law. Don't risk getting yourself hurt or fined. Check our website for a comprehensive list of local laws around the world. <https://aurelia-assist.aurelia-aerospace.com/world-drone-regulations>
7. **Pay attention.** Always keep your Aurelia monitored, this includes when flying in automatic flight mode; In case of an emergency, you may need to regain manual control of it.
8. **Power on/off.** Follow the safety procedure to power on/off your Aurelia as it is described in this manual; never leave an armed drone unattended; always power off the vehicle first, then the transmitter.
9. **Handle with care.** Store your Aurelia in clean, safe conditions and take care of it while traveling. Avoid leaving the Aurelia where it could get damaged.
10. **Batteries.** Be careful handling your LiPo batteries, read the charge and discharge instructions and store them in fiberglass LiPo bags. Mistreating your batteries can result in fires and explosions.
11. **Precaution.** Always have a fire extinguisher at hand and never use water to extinguish a fire.

4. Parts



5. What's Included

Your new Aurelia comes with the following:

		
1x Battery Charger (may differ)	1x Safety Vest	3X Hex Keys (Removable Kit)
		
2x Aurelia Logo Stickers	1x Micro SD 8GB for Flight Controller	1x Lanyard for transmitter
		
1x Airframe Cleaning Kit(Spray + Cloth)	1x Landing Pad*	1x Travel Case with AirTag*
		
1x Strobe Light**	X4 Standard	
		
2x Sets of Propellers + 4x Propeller Guards	1x LiPo Safety Bag	1x Standard/Long Endurance battery
		
3x Sets of Propellers + 6x Propeller Guards	2x LiPo Safety Bag	2x Standard/Long Endurance battery
		
4x Sets of Propellers + 8x Propeller Guards	2x LiPo Safety Bag	2x Standard/Long Endurance battery

*Only included with the Explorer and Ultimate Bundles.

**Only included with the Aurelia X6 MAX, Aurelia X6 Pro V1/V2, Aurelia X8 MAX.

5.1 What's included depending on the transmitter

		
1x Radiomaster TX16s with Storage Box	1x Ground Telemetry Radio mRo	2x Batteries for transmitter
		
1x Radiomaster TX16s with Storage Box	1x TxMOD Module	2x Batteries for transmitter
		
1x Herelink Black	1x Herelink Airunit	1x SIYI A2 Mini (may differ)
		
1x Herelink Blue	1x Herelink Airunit	1x SIYI A2 Mini (may differ)
		
1x Skydroid H16	1x H16 Airunit	1x MIPI Camera
		
1x Jeti DS12	1x Ground Telemetry Radio mRo	
		
1x Jeti DS12	1x Ground Telemetry Radio RFD900 with Cable	
		
1x UXV Tab 3 with Ground Microhard Radio		

5.2 How to use your AirTag

If you order the travel case, it comes with an AirTag that you can use for tracking the travel case or for personal purpose.

When you received your AirTag, you need to follow the next steps in order to connect it to your phone.

1. Press down on the polished stainless-steel battery cover of your AirTag and rotate counterclockwise until the cover stops rotating.
2. Remove the cover and the battery. *
3. Replace the battery and press down on the battery until you hear a sound. **This sound means that the battery is connected.**
4. When the sound finishes, repeat the process four more times. You should hear a sound each time you press on the battery, for a total of five sounds. **The fifth sound is different from the previous four.** This indicates that the AirTag is now ready to pair.
5. Replace the cover by aligning the three tabs on the cover with the three slots on your AirTag.
6. Press down on the cover and rotate the cover clockwise until it stops rotating.

In case these steps don't work, please [contact us](#) by sending an email to our technical support (page 113).

**Warning: AirTag, the battery cover, and the battery might present a choking hazard or cause other injury to small children.*

6. Operational Limits

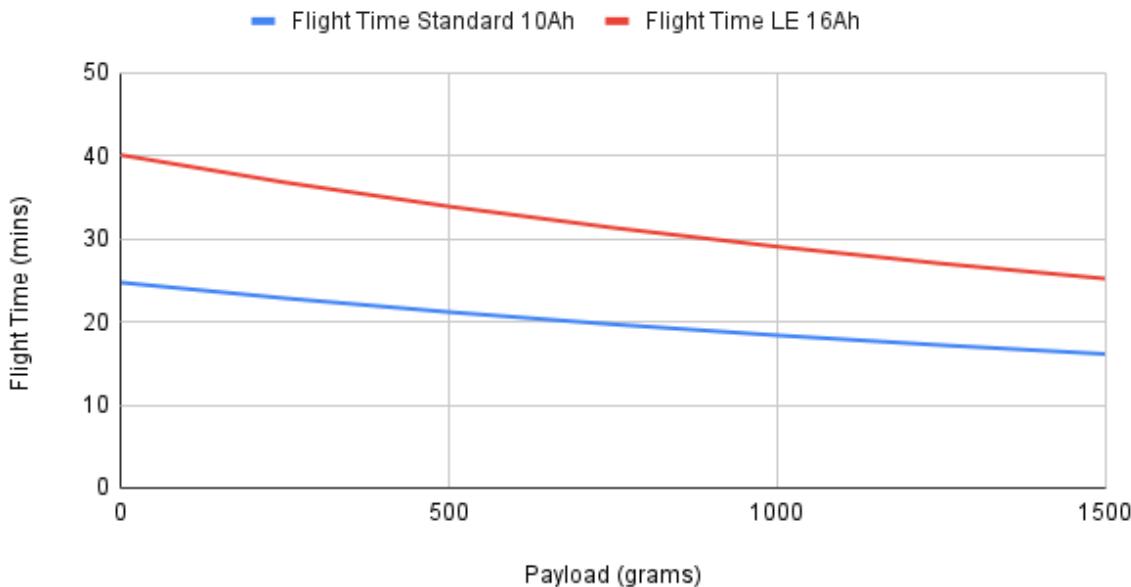
Always flight your Aurelia within its operational limits. Take into consideration that weather conditions and aggressive flying can significantly reduce the flight time.

Max range (distance from transmitter)*	1km → 5 km (0.6mi → 3 mi)
Max flight speed	15.5 m/s (56 km/h) (34.8mph)
Max ascent speed	2.5 m/s (9 km/h) (5.6 mph)
Max flight time Standard battery(ies) 10Ah**	25 min (16 min @Full payload)
Max flight time LE battery(ies) 16Ah**	40 min (25 min @Full payload)
Max payload	1.5 kg (3.3 lb)

**Depends on the transmitter*

***Consider speed and flight time. Make sure the Aurelia has enough battery remaining to return home.*

Flight Time vs. Payload X4



7. Batteries

7.1 LiPo Battery Safety

Before using your batteries, it's very important that you understand the basics of LiPo battery safety.

If the battery is handled correctly, the risk of a fire occurring from a LiPo battery is very low. Most incidents involving LiPo batteries are caused by improper handling or misuse.

Possible causes of LiPo battery fires are: overcharging or discharging, unbalanced cells, excessive current discharge, short circuits, physical damage, excessive temperature storage and, in the case of multiple cells in a pack such as the 6S, poor electrical connections.

LiPo batteries are safe to be disposed of at your local battery disposal service. Learning where you can dispose of your batteries before you have to do it is the Aurelia owner's responsibility.

The basic precautions you must take in consideration when using LiPo batteries are the following:

1. Store your batteries in a dry environment and inside a LiPo storage box or other fire proof container.
2. Never leave a battery unattended while charging and always charge on fireproof surfaces.
3. Read your LiPo charge user manual and make sure you're using it properly.
4. In a dual battery setup like almost all Aurelia's, you must make sure that both batteries have the same level of charge before connecting them.
5. Never discharge a battery under its safe voltage, 19.2V is the absolute minimum for the Aurelia standard batteries.
6. Never hit, puncture, smash, expose to heat or fire, or do anything to the battery that could damage it.

- If the battery looks damaged, it's puffed or leaking, do not try to use it and dispose of it immediately.

7.2 Battery Chargers

7.2.1 Balance Charge

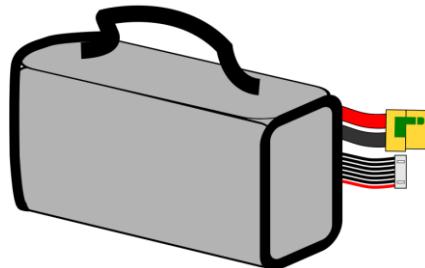
Always use the LiPo Balance option to charge your batteries, doing so will prolong the life of your batteries.

Use the following table as a reference when charging your batteries.

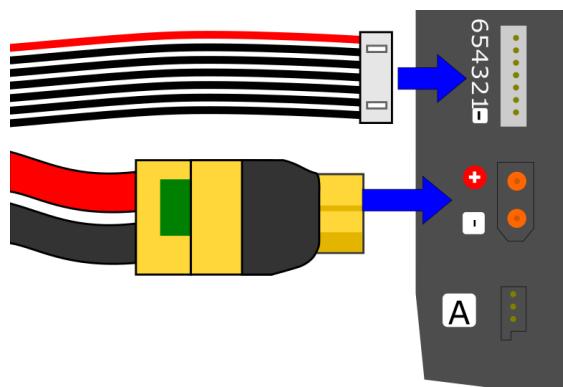
Battery capacity	Voltage	Current	Cells
10000Ah	22.2V	10A	6S
12000Ah	22.2V	10A	6S
16000Ah	22.2V	15A	6S
21000Ah	22.2V	20A	6S
22000Ah	22.2V	20A	6S
24000Ah	22.2V	20A	6S
25000Ah	22.2V	25A	6S
27000Ah	22.2V	25A	6S

7.2.1.1 SKY RC T200

- Place the LiPo battery inside a flame retardant LiPo bag, leave the wires outside of the bag.



- Connect the XT90 to XT60 adapter to the battery power plug.
- Connect the balance plug (the one with seven wires) to the balance port of the charger, match the first **black** wire with the pin marked as **-**.
- Connect the power leads of the battery to the output port of the charger (see image below).



5. Connect the charger to a wall AC outlet, the charger should turn on and you should see the following screen.



6. Use the Channel button to select the channel where your battery is connected (A or B).



7. Use the **Inc** and **Dec** buttons to select **LiPo BATT**, then press **Start**.



8. Use the **Inc** and **Dec** buttons to select **LiPo BALANCE**, then press **Start**.



9. Use the **Inc** and **Dec** buttons to adjust the current depending on the batteries you have.

The battery charger Sky RC T200 has a maximum charge capacity of 12A, if your battery has a higher capacity, set the charger to 12A, it will be necessary to give it another charge cycle.

Once the current has been adjusted, press the **Start** button.



10. Use the **Inc** and **Dec** buttons to adjust the voltage to the number of cells of your batteries.



11. Press and hold the **Start** button until the message **BATTERY CHECK...** appears.



12. Press **Start** again and the charge will begin.
13. If you need to stop the charging process press and hold the stop button before disconnecting the battery.
14. The charger will beep and shows the message **[END: FINISH]** when the battery is fully charged. Press and hold the stop button and then disconnect the battery.
15. If the battery capacity is greater than 12A, the charger will still beep when finished but will not yet display the **[END: FINISH]** message, so it will be necessary to press Start again to complete the charge.

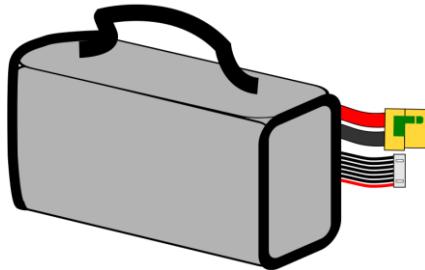


16. If the battery is already fully charged, this can be confirmed by pressing **Start** again and observing the message **BATTERY WAS FULL**:

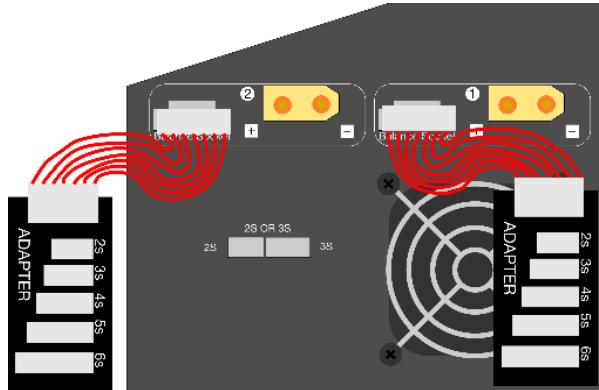


7.2.1.2 UP600+

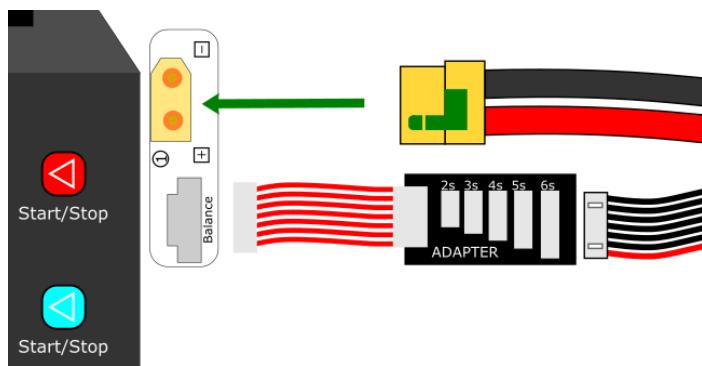
1. Place the LiPo battery inside a flame retardant LiPo bag, leave the wires outside of the bag.



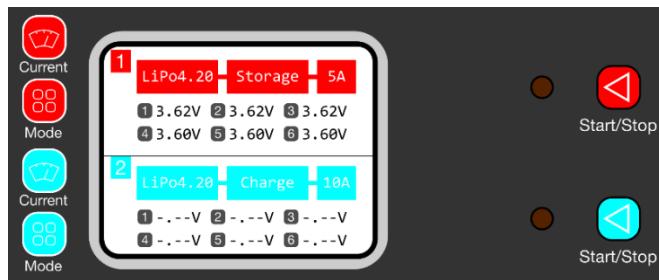
2. Connect the Balance adapter to the Balance port of the UP600+ Charger.



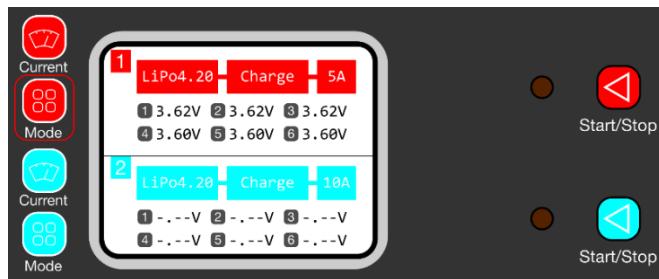
3. Connect the balance plug (the one with seven wires) to the port of the balance adapter marked as 6 cells.
4. Connect the power leads of the battery to the output port of the charger.



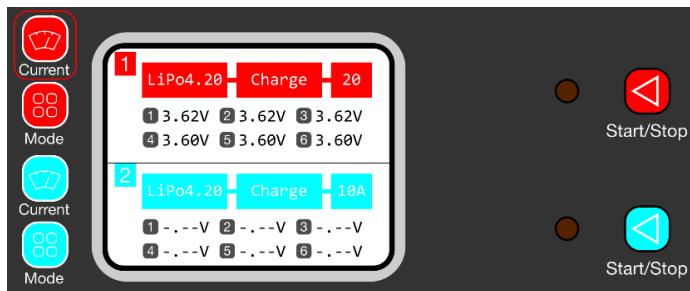
5. Power on the UP600+ Charger.
6. The charger should detect the battery and you should see the following screen.



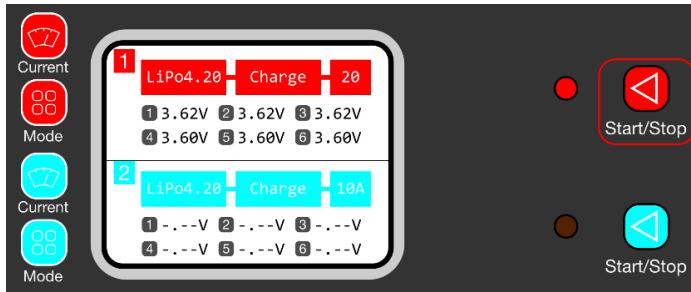
7. Use the **Mode** button to select **Charge**.



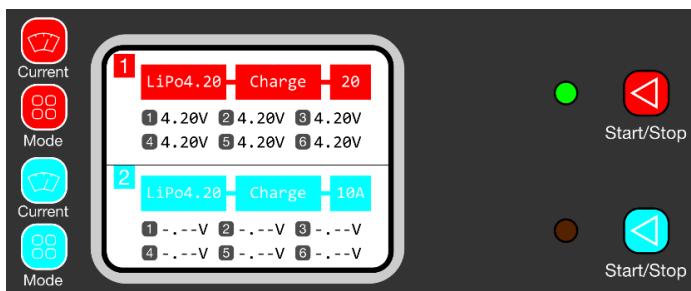
8. Use the current button to adjust the current depending on the capacity of the battery/batteries you have, see reference table in [section 7.2.1, page 16](#).



9. Press and hold the **Start** button to begin the charge.



10. If you need to stop the charging process press the **Stop** button before disconnecting the battery.
11. The charger will beep when the battery is fully charged and the LED will turn green. Then it will be safe to disconnect the battery.



7.2.2 Storage/Discharge

If you don't plan to use your batteries soon you must discharge them. The discharge function of the chargers will discharge them to a safe level for storage.



Discharging a battery will take way longer than charging it, we strongly recommend you not to charge your batteries unless you're sure you will fly.

7.2.2.1 SKY RC T200

To discharge the LiPo battery with the SKY RC T200 charger follow the same steps as for charging on [section 7.2.1.1, page 16](#) but in step 8 instead of selecting **LiPo BALANCE**, select **LiPo DISCHARGE**.

7.2.2.2 UP600+

To discharge the LiPo battery with the SKY RC T200 charger follow the same steps as for charging on [section 7.2.1.2, page 19](#) but in step 7 instead of selecting **CHARGE**, select **STORAGE**.

7.3 LiPo Battery Voltages

The cell voltage values can tell you about the status of your **Standard Batteries**.

	Total	Per cell*
Nominal Voltage	22.2 V	3.7 V
Storage Voltage	23.1 V – 22.8 V	3.85 V
Maximum Voltage	25.2 V	4.2 V
Failsafe Voltage	21.2 V	3.53 V
Depleted Voltage	19.2 V	3.2 V
Damage Voltage	18 V	3.0 V

*Warning: The maximum acceptable range between cells is 0.15V, if the voltage between cells is higher then the charger will take much longer to charge as it will be trying to balance the cell(s), [contact technical support](#) for more information (page 113).

8. First steps

Your Aurelia comes with its sensors calibrated for the specific geographical conditions in which it was tested; in order to make sure that the Aurelia will perform as expected in its new environment, you must recalibrate the IMU sensors before its first flight.

8.1 Software Installation

There's a number of Ground Control Station (GCS) programs that you can use. The instructions in this manual are for Mission Planner (Windows compatible) and QGroundControl (Windows and macOS compatible) software.

These can be downloaded for free from its official site:

- Mission Planner:

<https://tinyurl.com/MissionPlannerDownload>

- QGroundControl:

<https://qgroundcontrol.com/downloads/>

- If you are interested in other options, check the following link:

<https://tinyurl.com/GroundStations>

8.2 Connecting to a Ground Station

The Aurelia can be connected wired or wirelessly to the ground stations, below you will find how to connect depending on the transmitter you have and the ground station you are using.

8.2.1 Using Mission Planner

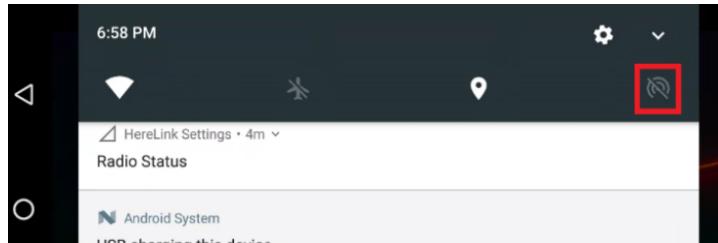
8.2.1.1 Connecting through USB

1. On the back-right side, you will find the USB port of your Aurelia. Connect the USB cable to the Aurelia's USB port and to the GCS device.
2. Wait for the startup tones and open Mission Planner.
3. At the top right select the right **COM** port and a baud rate of **115200**.
4. Click on **CONNECT** and wait for Mission Planner to get the parameters of the Aurelia.

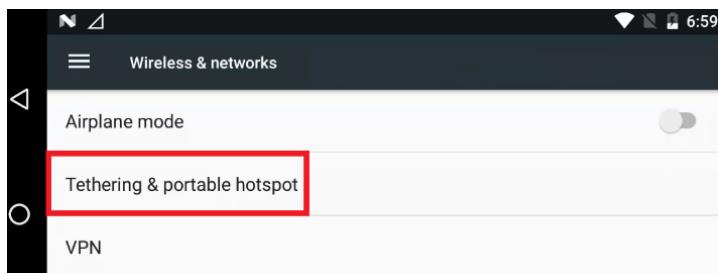


8.2.1.2 Herelink Wi-Fi Hotspot settings

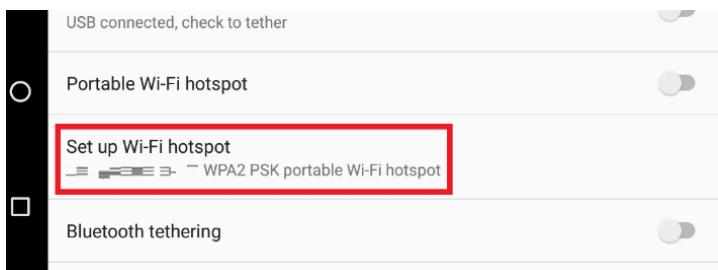
- Slide down from the top of the Herelink screen and long press the **hotspot icon** (top right).



- Go to **Tethering and portable hotspot**.



- Tap on **Setup Wi-Fi hotspot**. There you can see and/or change the network's name and password.



Set up Wi-Fi hotspot

Network name

Security
 WPA2 PSK

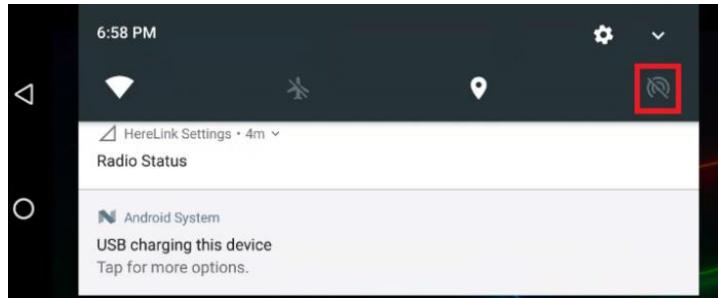
Password

[CANCEL](#) [SAVE](#)

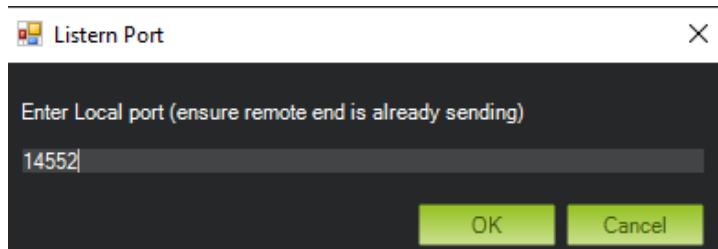
8.2.1.2.1 Connecting through Herelink transmitter (UDP)

This method uses the Herelink hotspot to connect to a computer or tablet through Wi-Fi. Use this method to fly the Aurelia and calibrate its sensors without being connected to the Internet.

1. Place the battery(ies) inside the battery box of the Aurelia.
2. Power on your Herelink transmitter.
3. Swipe down from the top of the screen and tap the **hotspot icon** and wait until it turns white.



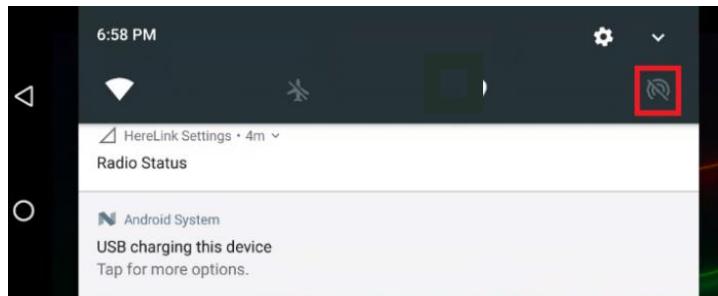
4. Connect the battery(ies) to the yellow plug(s) in the Aurelia.
5. Go to the Wi-Fi settings in the device that you will use as GCS, and connect to the Herelink Wi-Fi network.
6. Once connected, open Mission Planner.
7. Set the connection port as **UDP** and click on **CONNECT**.
8. Leave the Port settings as **14552** and click ok. Wait for Mission Planner to get the parameters from the Aurelia.



8.2.1.3 Connecting through transmitter (UDPCI)

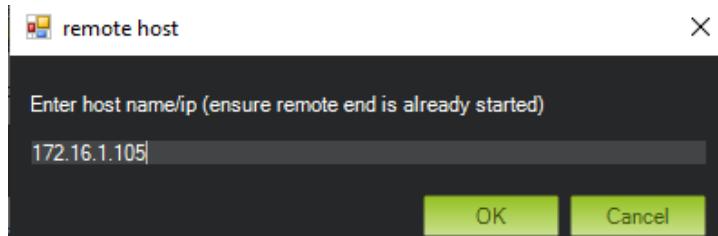
This method uses the Internet as a link between the Herelink/Skydroid H16 and the ground station. Use this method to fly the Aurelia and calibrate its sensors while being connected to the Internet.

1. Place the battery(ies) inside the battery box of the Aurelia.
2. Power on your transmitter.
3. Swipe down from the top of the screen, tap the **Wi-Fi icon** and wait until it turns white, then make a long press on it to show nearby 5G networks.



4. Connect to the same network as your ground station.

5. Once connected, press the **gear icon** at the top right and scroll down in order to locate the **IP address** of it, this will be needed in step 9.
6. Connect the battery(ies) to the yellow plug(s) in the Aurelia.
7. Open Mission Planner.
8. Set the connection port as **UDPCI** and click on **CONNECT**.
9. It will ask for the **IP address** we previously get, type it and press **ok**.



10. Leave the Port settings as **14552** and click ok. Wait for Mission Planner to get the parameters from the Aurelia.

8.2.1.4 Connecting through telemetry radio

This method uses the telemetry radio to connect to a computer or tablet. Use this method for flying the Aurelia and calibrating its sensors, **but before connecting, both antennas must be placed on both telemetry radios**.

1. Place the battery(ies) inside the battery box of the Aurelia.
2. Power on your transmitter.
3. Connect the battery(ies) to the XT90 yellow plug(s) of the Aurelia.
4. Connect the telemetry radio to the computer using the USB cable.
5. Open Mission Planner.
6. Select the right **COM** port and set the baud rate as **57600**.
7. Click on **CONNECT** and wait for Mission Planner to get the parameters of the Aurelia.



8.2.1.5 Connecting through telemetry module (TxMOD)

This method uses the RFD TxMOD hotspot and the UDP/TCP protocol to connect the Aurelia to a computer or tablet. This method is used to fly the Aurelia and calibrate its sensors, **but before connecting, both antennas must be placed on both telemetry radios**.

8.2.1.5.1 UDP

1. At the top right, select in the first box the **UDP** option, leave the baud rate as default and click **CONNECT**.
2. It will be prompted for a Listen Port, enter **14550** and press **OK**.
3. Wait for all parameters to be downloaded and the connection will be ready.

8.2.1.5.2 TCP

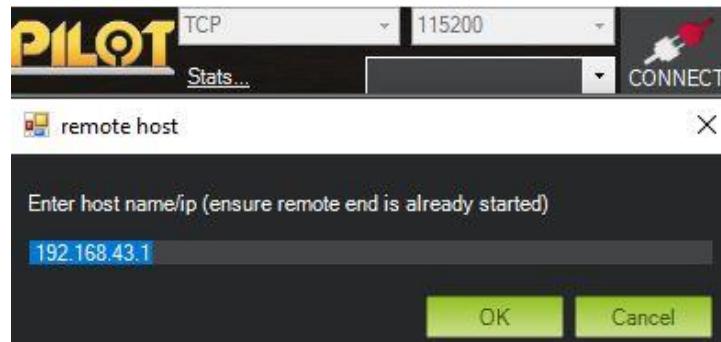
1. At the top right, select in the first box the **TCP** option, leave the baud rate as default and click **CONNECT**.

2. It will be prompted for an IP address, enter **192.168.4.1** and enter the Port as **23**, click **OK** when done.
3. Wait for all parameters to be downloaded and the connection will be ready.

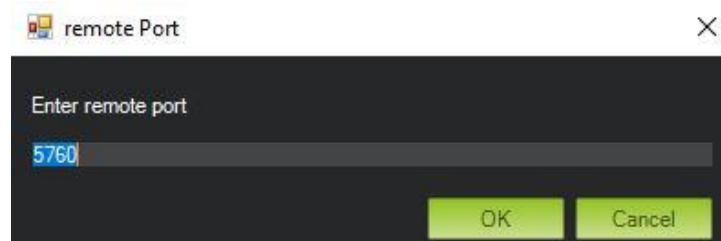
8.2.1.6 Connect through transmitter H16 (TCP)

This method uses the Skydroid H16 hotspot to connect to a computer or tablet through Wi-Fi. Use this method for flying the Aurelia and calibrating its sensors without internet.

1. Place the battery(ies) inside the battery box of the Aurelia.
2. Power on your transmitter.
3. Connect the battery to the XT90 yellow plug(s) of the Aurelia.
4. Go to the Wi-Fi settings in the device that you will use as GCS, and connect to the Skydroid H16 Wi-Fi network.
5. Open Mission Planner.
6. Set the connection port as **TCP** and click on **CONNECT**.
7. Set the following **IP address** and press **OK**.



8. Set the Port settings as **5760** and click ok. Wait for Mission Planner to get the parameters from the Aurelia.



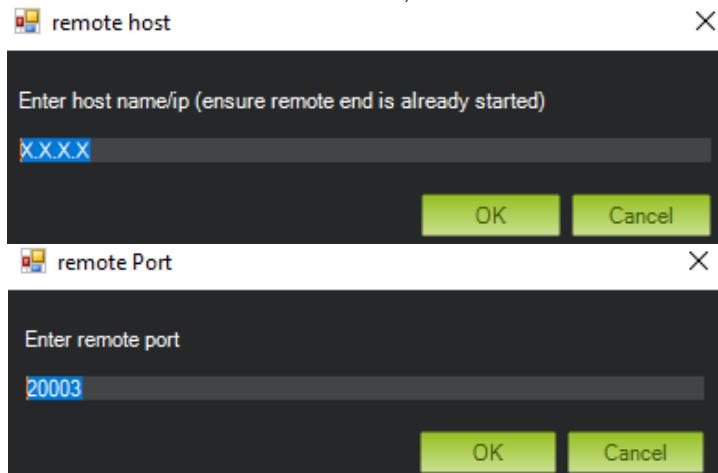
8.2.1.7 Connect through transmitter UXV Tab3 (TCP)

This method uses the UXV Tab3 ethernet port to connect to a computer or tablet. This method is used to fly the Aurelia and calibrate its sensors.

1. Place the battery(ies) inside the battery box of the Aurelia.
2. Power on your transmitter.
3. Connect the battery(ies) to the XT90 yellow plug of the Aurelia.
4. Open Mission Planner.
5. At the top right, select in the first box the **TCP** option, leave the baud rate as default and click **CONNECT**.



6. It will be prompted for an IP address, enter the **IP address** that comes on a label on the back of the transmitter and enter the Port as **20003**, click **OK** when done.

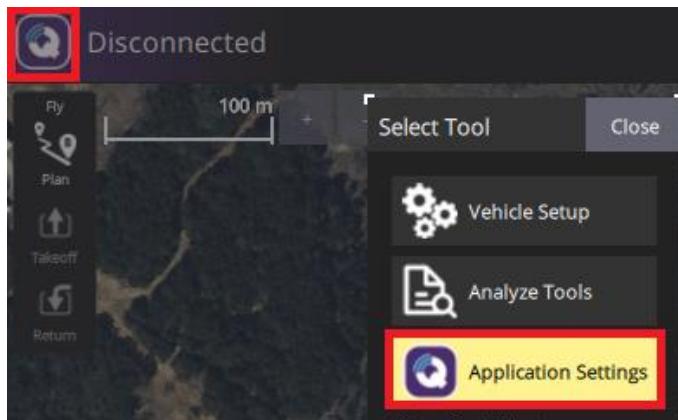


7. Wait for all parameters to be downloaded and the connection will be ready.

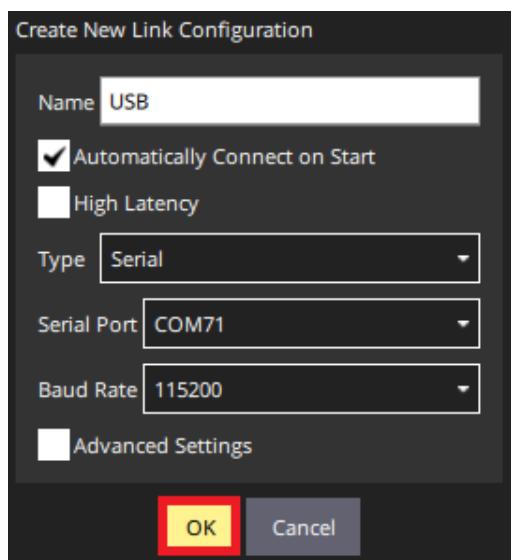
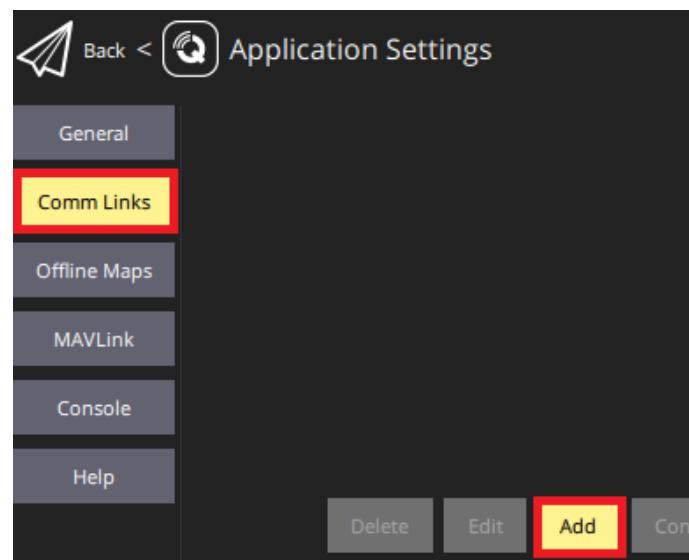
8.2.2 Using QGroundControl (QGC)

8.2.2.1 Connecting through USB

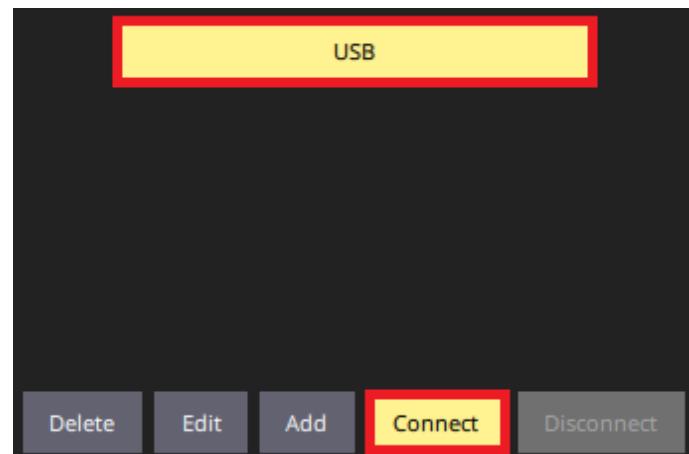
1. On the back-right side, you will find the USB port of your Aurelia. Connect the USB cable to the Aurelia's USB port and to the GCS device.
2. Wait for the startup tones and open QGroundControl.
3. At the top left, click on the **Q icon** and go to **Application Settings** and then to **Comm Links**.



4. Below is the **Add** button, click on it to create and configure the connection link. It is necessary to name the link, mark the **Automatically Connect on Start** checkbox, select the type as **Serial**, select the serial port as the corresponding **COM** port and Baud Rate of **115200**, click **OK** when done.



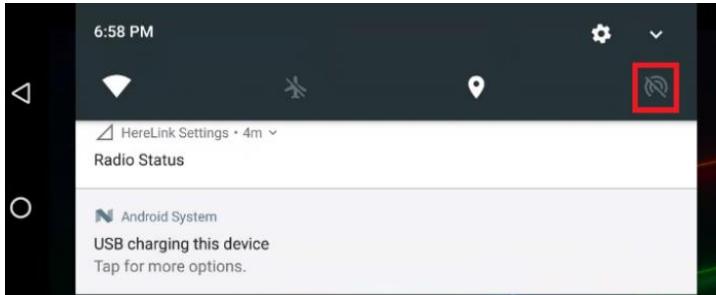
- Once saved, select the newly configured port and click **Connect** at the bottom, wait for QGC to get the parameters of the Aurelia.



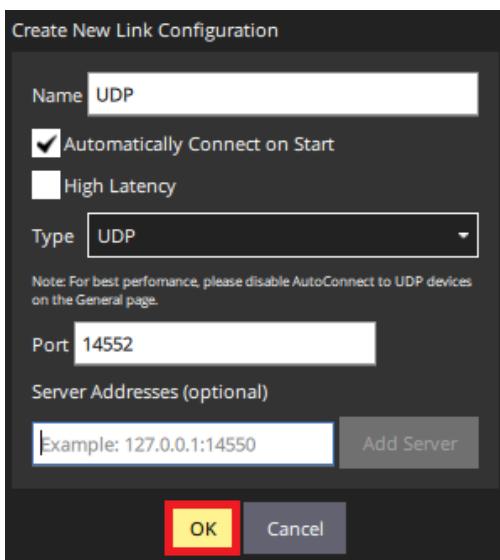
8.2.2.2 Connecting through Herelink transmitter (UDP)

This method uses the Herelink hotspot to connect to a computer or tablet through Wi-Fi. Use this method to fly the Aurelia and calibrate its sensors without being connected to the Internet.

1. Place the battery(ies) inside the battery box of the Aurelia.
2. Power on your Herelink transmitter.
3. Swipe down from the top of the screen and tap the **hotspot icon** and wait until it turns white.



4. Connect the battery(ies) to the yellow plug(s) in the Aurelia.
5. Go to the Wi-Fi settings in the device that you will use as GCS, and connect to the Herelink Wi-Fi network.
6. Once connected, open QGroundControl.
7. At the top left, click on the **Q icon** and go to **Application Settings** and then to **Comm Links**.
8. Below is the **Add** button, click on it to create and configure the connection link. It is necessary to name the link, mark the **Automatically Connect on Start** checkbox, select the type as **UDP** and enter the Port as **14552**, click **OK** when done.

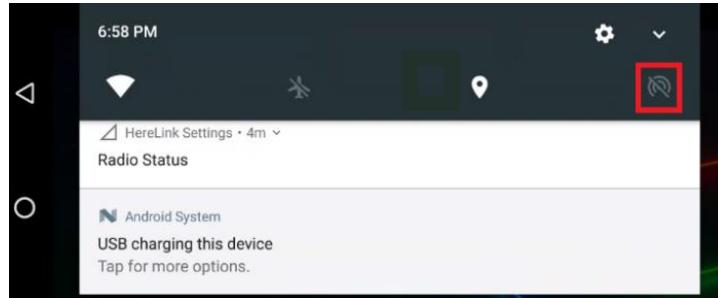


9. Once saved, select the newly configured port and click **Connect** at the bottom, wait for QGC to get the parameters of the Aurelia.

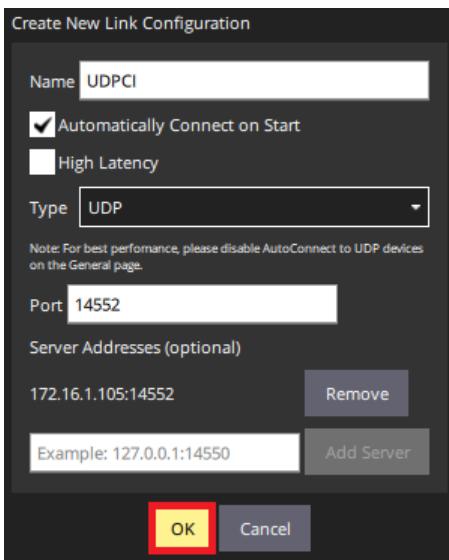
8.2.2.3 Connecting through transmitter (UDPCI)

This method uses the Internet as a link between the Herelink/Skydroid H16 and the ground station. Use this method to fly the Aurelia and calibrate its sensors while being connected to the Internet.

1. Place the battery(ies) inside the battery box of the Aurelia.
2. Power on your transmitter.
3. Swipe down from the top of the screen, tap the **Wi-Fi icon** and wait until it turns white, then make a long press on it to show nearby 5G networks.



4. Connect to the same network as your ground station.
5. Once connected, press the **gear icon** at the top right and scroll down in order to locate the **IP address** of it, this will be needed below.
6. Connect the battery(ies) to the yellow plug(s) in the Aurelia.
7. Open QGroundControl.
8. At the top left, click on the **Q icon** and go to **Application Settings** and then to **Comm Links**.
9. Below is the **Add** button, click on it to create and configure the connection link. It is necessary to name the link, mark the **Automatically Connect on Start** checkbox, select the type as **UDP** and enter the Port as **14552**, on Server Addresses enter the **IP address** previously located in the Wi-Fi settings of the transmitter and tap **Add Server**, click **OK** when done.

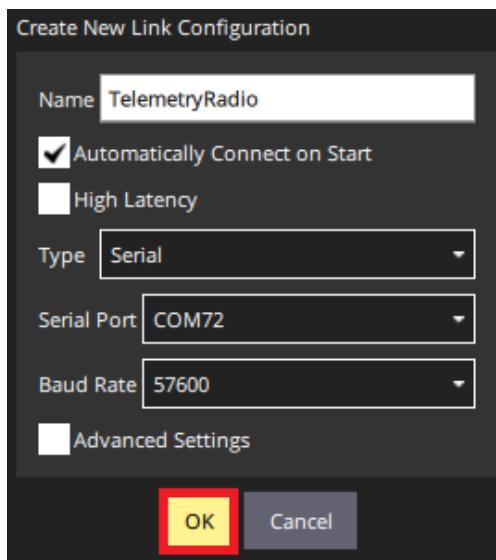


10. Once saved, select the newly configured port and click **Connect** at the bottom, wait for QGC to get the parameters of the Aurelia.

8.2.2.4 Connecting through telemetry radio

This method uses the telemetry radio to connect to a computer or tablet. Use this method for flying the Aurelia and calibrating its sensors, **but before connecting, both antennas must be placed on both telemetry radios.**

1. Place the battery(ies) inside the battery box of the Aurelia.
2. Power on your transmitter.
3. Connect the battery(ies) to the XT90 yellow plug of the Aurelia.
4. Connect the telemetry radio to the computer using the USB cable.
5. Open QGroundControl.
6. At the top left, click on the **Q icon** and go to **Application Settings** and then to **Comm Links**.
7. Below is the **Add** button, click on it to create and configure the connection link to be used. It is necessary to name the link, mark the **Automatically Connect on Start** checkbox, select the type as **Serial**, select the serial port as the **COM** port corresponding to the telemetry radio and Baud Rate of **57600**, click **OK** when done.



8. Once saved, select the newly configured port and click **Connect** at the bottom, wait for QGC to get the parameters of the Aurelia.

8.2.2.5 Connecting through telemetry module (TxMOD)

This method uses the RFD TxMOD hotspot and the UDP/TCP protocol to connect the Aurelia to a computer or tablet. This method is used to fly the Aurelia and calibrate its sensors, **but before connecting, both antennas must be placed on both telemetry radios.**

8.2.2.5.1 UDP

1. At the top left, click on the **Q icon** and go to **Application Settings** and then to **Comm Links**.
2. Below is the **Add** button, click on it to create and configure the connection link. It is necessary to name the link, mark the **Automatically Connect on Start** checkbox, select the type as **UDP** and enter the Port as **14550**, click **OK** when done.
3. Once saved, select the newly configured port and click **Connect** at the bottom.
4. Wait for all parameters to be downloaded and the connection will be ready.

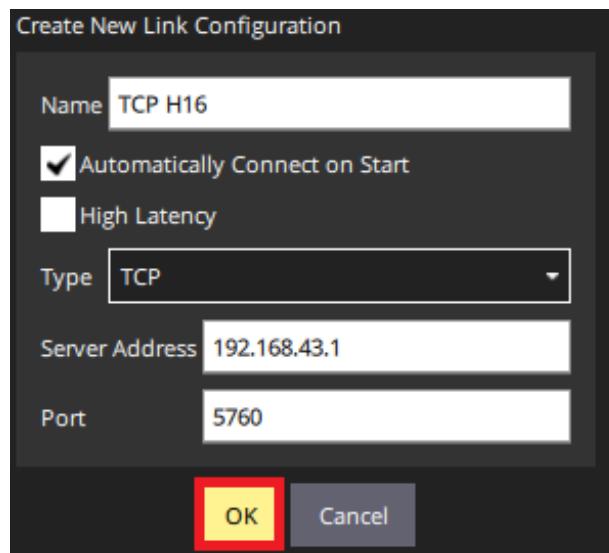
8.2.2.5.2 TCP

1. At the top left, click on the **Q icon** and go to **Application Settings** and then to **Comm Links**.
2. Below is the **Add** button, click on it to create and configure the connection link. It is necessary to name the link, mark the **Automatically Connect on Start** checkbox, select the type as **TCP** and enter the Port as **23**, on Server Addresses enter the IP **192.168.4.1** and tap **Add Server**, click **OK** when done.
3. Once saved, select the newly configured port and click **Connect** at the bottom.
4. Wait for all parameters to be downloaded and the connection will be ready.

8.2.2.6 Connect through transmitter H16 (TCP)

This method uses the Skydroid H16 hotspot to connect to a computer or tablet through Wi-Fi. Use this method for flying the Aurelia and calibrating its sensors without internet.

1. Place the battery(ies) inside the battery box of the Aurelia.
2. Power on your transmitter.
3. Connect the battery(ies) to the XT90 yellow plug of the Aurelia.
4. Go to the Wi-Fi settings in the device that you will use as GCS, and connect to the Skydroid H16 Wi-Fi network.
5. Open QGroundControl.
6. At the top left, click on the **Q icon** and go to **Application Settings** and then to **Comm Links**.
7. Below is the **Add** button, click on it to create and configure the connection link. It is necessary to name the link, mark the **Automatically Connect on Start** checkbox, select the type as **TCP** and enter the Port as **5760**, on Server Addresses enter the IP **192.168.43.1** and tap **Add Server**, click **OK** when done.

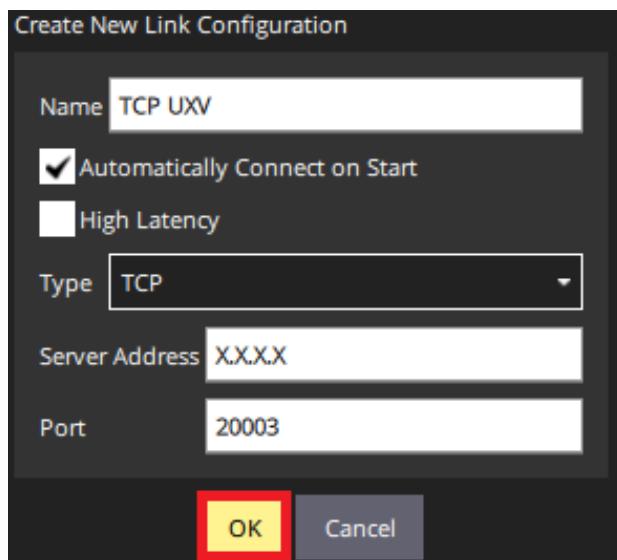


8. Once saved, select the newly configured port and click **Connect** at the bottom, wait for QGC to get the parameters of the Aurelia.

8.2.2.7 Connect through transmitter UXV Tab3 (TCP)

This method uses the UXV Tab3 ethernet port to connect to a computer or tablet. This method is used to fly the Aurelia and calibrate its sensors.

1. Place the battery(ies) inside the battery box of the Aurelia.
2. Power on your transmitter.
3. Connect the battery(ies) to the XT90 yellow plug of the Aurelia.
4. Open QGroundControl.
5. At the top left, click on the **Q icon** and go to **Application Settings** and then to **Comm Links**.
6. Below is the **Add** button, click on it to create and configure the connection link. It is necessary to name the link, mark the **Automatically Connect on Start** checkbox, select the type as **TCP** and enter the Port as **20003**, on Server Addresses enter the **IP address** that comes on a label on the back of the transmitter and tap **Add Server**, click **OK** when done.



7. Once saved, select the newly configured port and click **Connect** at the bottom.
8. Wait for all parameters to be downloaded and the connection will be ready.

8.3 Accelerometer Calibration

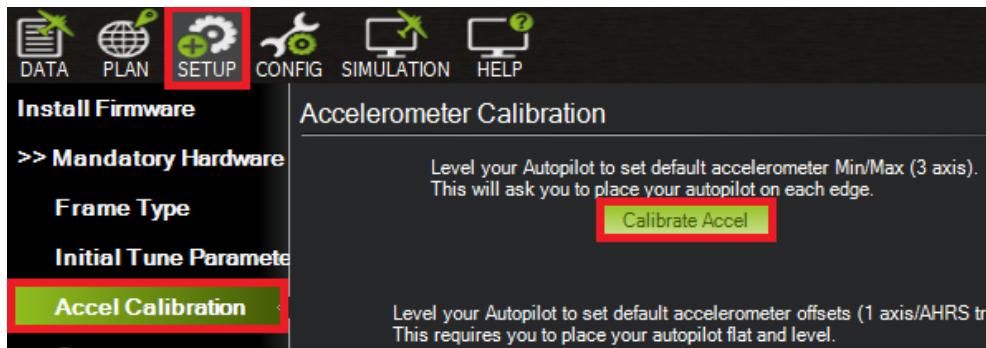
Your Aurelia should already have the accelerometer calibrated and it is not necessary to recalibrate it when you receive your unit, only if the control check system shows it in the message section.

We recommend doing this indoors so you can use the walls, floor and ceiling as reference.

You will need one person to assist you during this process.

8.3.1 Using Mission Planner

1. Connect the Aurelia to Mission Planner following the steps from [section 8.2.1, page 22](#).
2. Go to **SETUP, Mandatory Hardware, Accel Calibration**.
3. Place your Aurelia leveled on the ground and click on **Calibrate Accel**.

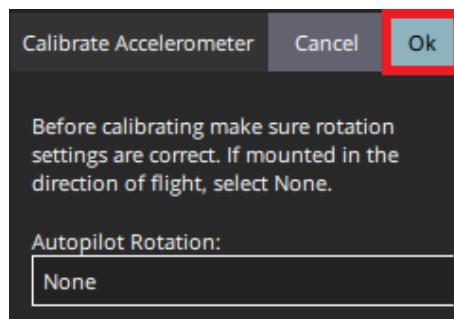


4. Mission Planner will prompt you to place your vehicle level and then click the **Click when done button**. Then it will prompt you to do the same for other five positions*. Put the Aurelia landing skids against a wall for the left, right, up and down positions and against the ceiling for the back position.
5. When finished it will show the **Calibration Successful** message, reboot your Aurelia by battery in order to apply the calibration changes.

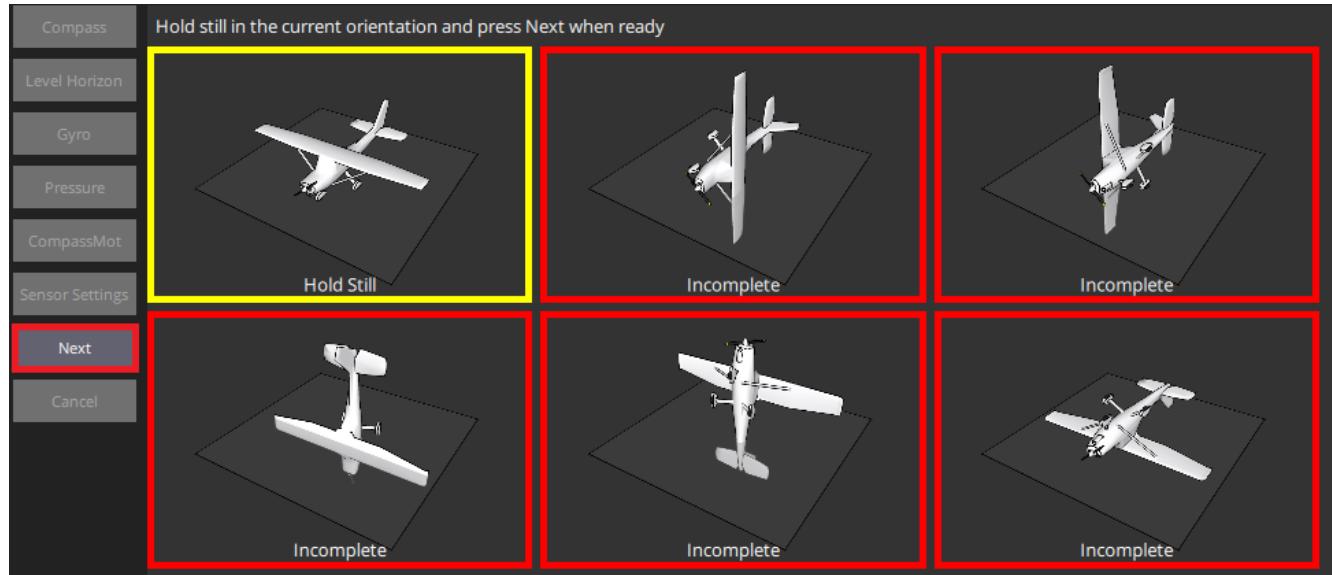
*Use the page 36 for reference (Hold the page so the letters are horizontal).

8.3.2 Using QGroundControl

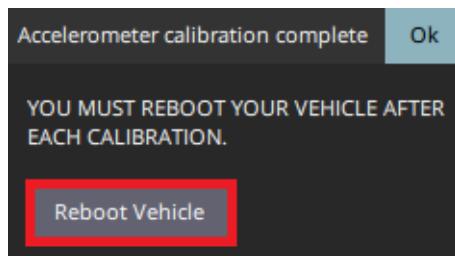
1. Connect the Aurelia to QGroundControl following the steps from [section 8.2.2, page 27](#).
2. Click on the **Q icon** and go to **Vehicle Setup, Sensors, Accelerometer**.
3. A pop-up will open on the right side, before clicking **Ok** first place your Aurelia leveled on the ground.

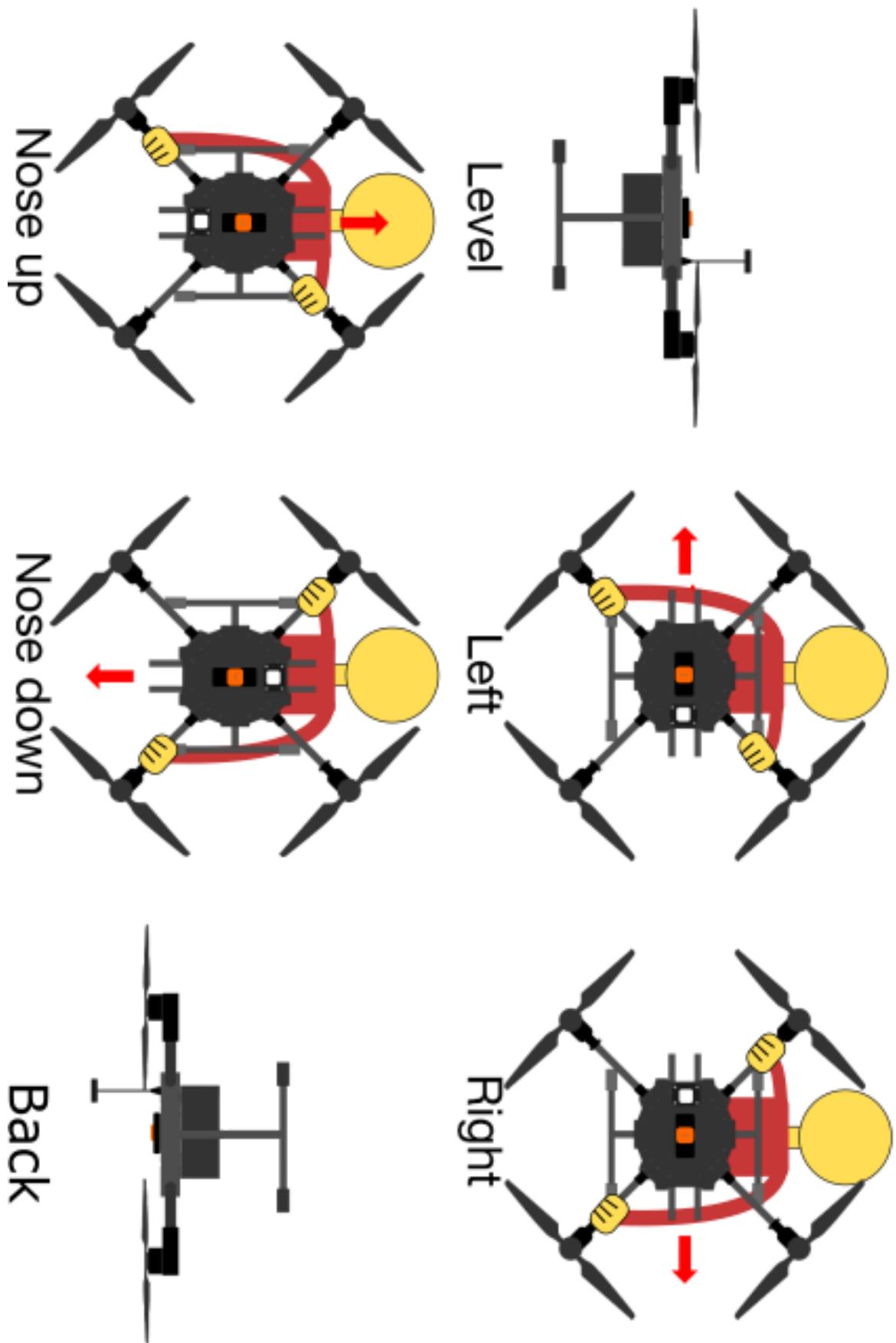


4. You will see the positions in the order they must be completed, once you have placed the Aurelia in the requested position click on **Next** until all positions are completed.



- When finished another pop-up will appear on the right side with the message **Accelerometer calibration complete** and a button to reboot the vehicle, click on it in order to apply the calibration changes.





8.4 Compass Calibration



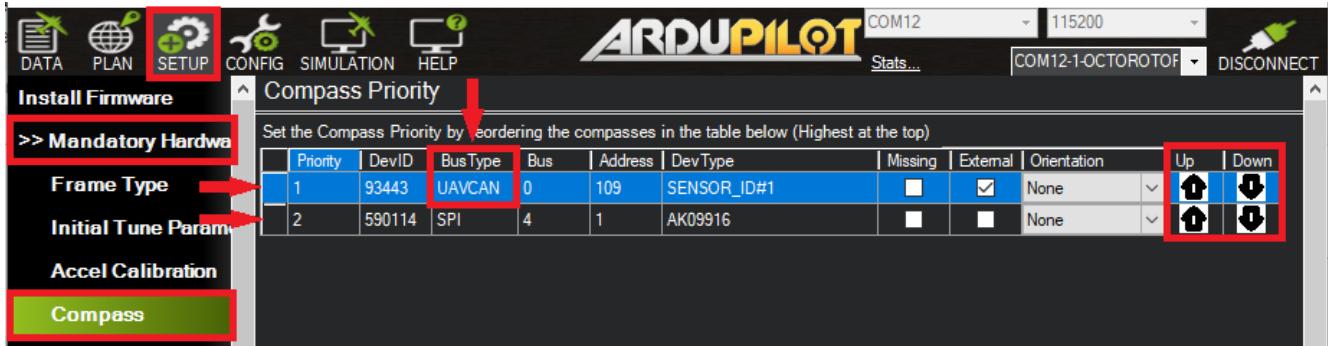
You must perform this procedure away from metals such as power towers, building structures, cars, etc. Make sure you don't have metals or magnets in your pockets.

Secure the compass mast and make sure it's pointing forward; this is critical for a good compass calibration.

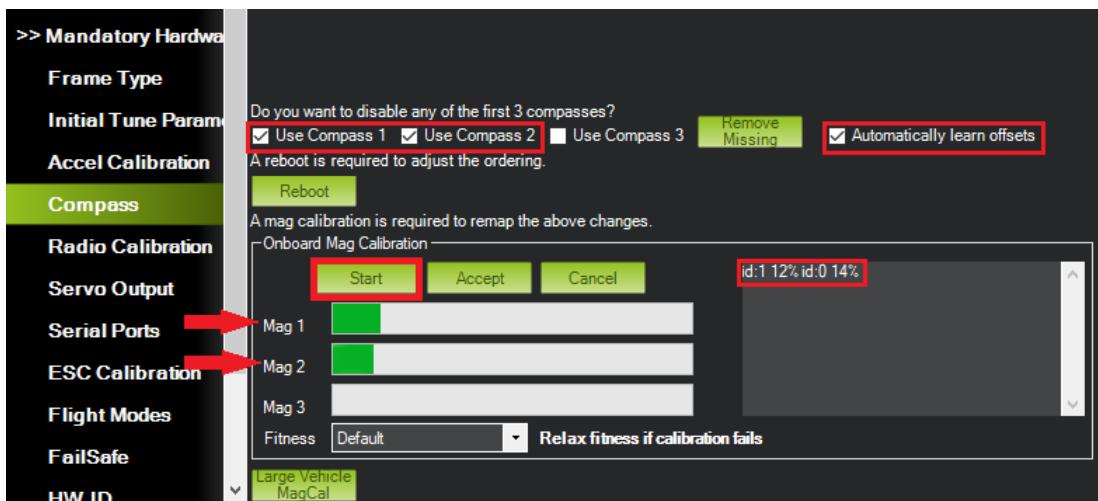
Calibrate your compass near your flight location.

8.4.1 Using Mission Planner

1. Connect the Aurelia to Mission Planner following the steps from [section 8.2.1, page 22](#).
2. Go to **SETUP, Mandatory Hardware, Compass Calibration**.
3. Make sure that the compass with BusType UAVCAN has priority 1, if it doesn't, adjust it with the arrows on the right.



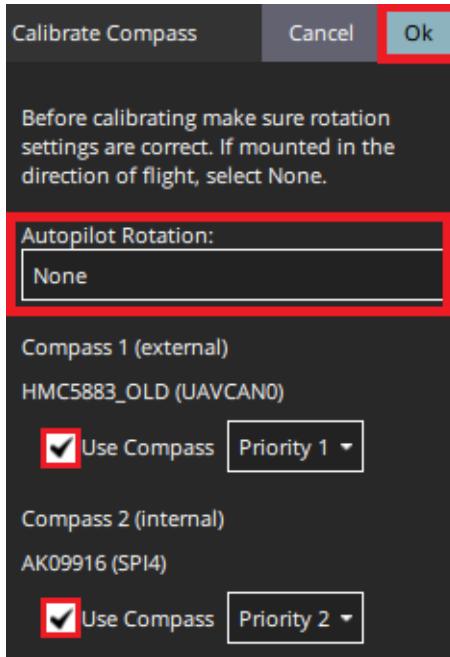
4. Disconnect from Mission Planner and reboot the Aurelia by battery to apply changes, reconnect and go to the Compass Calibration section.
5. Before starting the calibration, make sure to mark the **Use Compass 1** and **Use Compass 2** checkboxes, if your Aurelia has three compasses then also mark the **Use Compass 3** checkbox.
In both cases, also mark the Automatically learn offsets checkbox.
6. Click on **Start**. The percentage of progress of the Calibration Bars will be displayed on the right side of the Onboard Mag Calibration box.



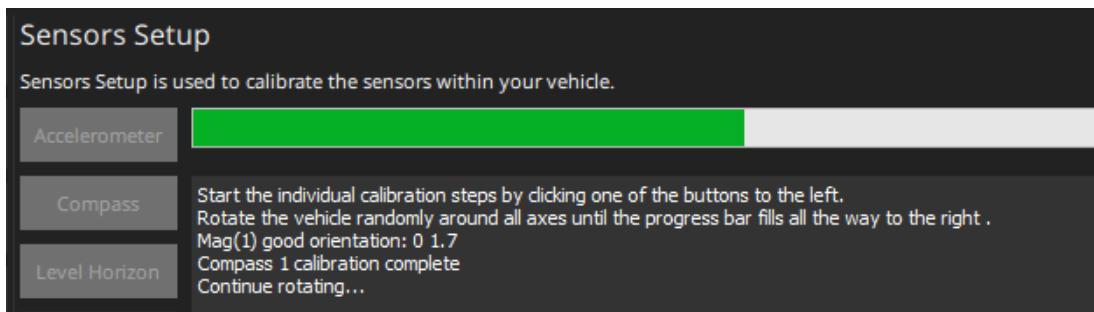
7. Hold your Aurelia level in the air and spin two full turns, the Calibration Bars (green bars) should start to fill. Then do the same for each one of the six positions shown in page 31, always spinning to the same direction.
8. Continue turning the Aurelia around different axis until you hear the musical tones and Mission Planner prompts the message **Please Reboot the autopilot**.
9. Click **OK** and reboot the Aurelia. Above the **Start button** there is a **reboot button**.
10. Verify the Aurelia's heading in the map of Mission Planner (that the red line matches where the front of the Aurelia is pointing), if the actual heading is different from the one shown in the map, make sure you're away from metals and magnets and repeat the calibration process.

8.4.2 Using QGroundControl

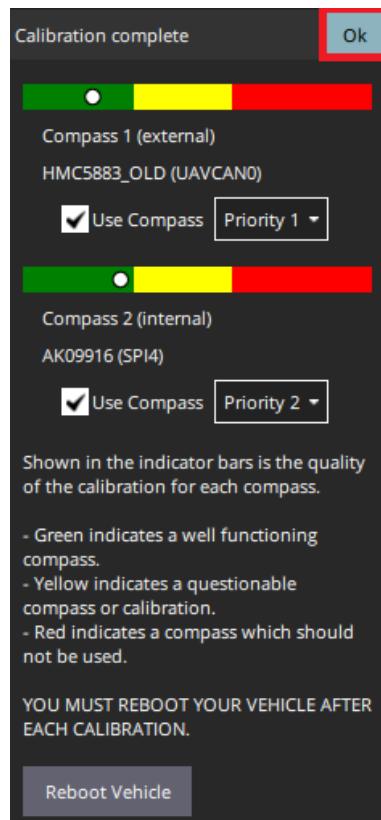
1. Connect the Aurelia to QGroundControl following the steps from [section 8.2.2, page 27](#).
2. Click on the **Q icon** and go to **Vehicle Setup, Sensors, Compass**.
3. A pop-up will open on the right side, before clicking **Ok** first place your Aurelia leveled on the ground and make sure that the **Autopilot Rotation** is **None** and that both **Use Compass** checkboxes (or three if your Aurelia has three compasses) are marked.



- Click on **Ok**. The percentage of progress of the Calibration Bar will be displayed as a green bar that will fill up.



- Hold your Aurelia level in the air and spin two full turns, the green bars should start to fill. Then do the same for each one of the six positions shown in page 36, always spinning to the same direction.
- Continue turning the Aurelia around different axis until you hear the musical tones and QGroundControl shows the pop-up with the calibration result along with the **Reboot Vehicle** message.
- The calibration result of the compass with Priority 1 should be in the green area of the indicator, the rest of the compasses can be between the yellow and green area of the indicator, however if any of the results are in the red area of the indicator, make sure you're away from metals and magnets and repeat the calibration process.



- In case the calibration results are within the acceptable range, click on **Ok** and reboot the Aurelia by battery to apply changes and verify the Aurelia's heading in the map of QGroundControl, if the actual heading is different from the one shown in the map, make sure you're away from metals and magnets and repeat the calibration process.

9. Ground Control Station (GCS)

A Ground Control Station or GCS is simply a computer or other smart device running a compatible GCS software. The GCS communicates with the Aurelia using the telemetry radios, and shows the Aurelia's current position, speed and heading, among other data.

By this point you already installed Mission Planner or QGroundControl on your laptop and used it to calibrate your Aurelia sensors; now we will explain the basic use of the software for monitoring your Aurelia while flying and planning autonomous missions.



9.1 Mission Planner Data Screen



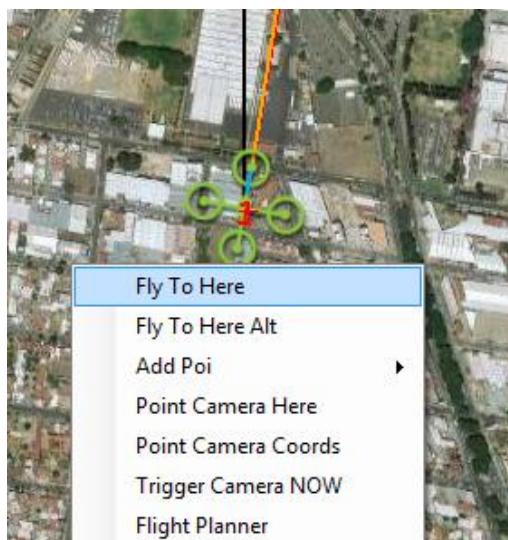
The Mission Planner screen is divided into 3 sections, at the top left is the virtual horizon, below is a menu of tabs that can be switched between, it is recommended to have the Messages tab always opened when flying, and the map on the right side.

The virtual horizon more commonly known as the HUD (Heads-Up Display) indicates the level of the Aurelia using the red lines and arrows as a reference, as well as the status of different sensors, which will be explained below:

- Heading of the drone* : Where the arrow on the top of the flight controller is pointing.
- Telemetry signal* : Signal strength between the ground station and the Aurelia, if the transmitter has a ground station and there is a wireless connection to MP, then the percentage we see in Mission Planner is from the transmitter to the Aurelia, not from the computer to the Aurelia.
- Speed of the drone* : Current horizontal speed of the Aurelia.
- Attitude* : Current state of the Aurelia.
- Altitude* : Current altitude of the Aurelia.
- Flight mode* : Selected flight mode.
- Battery monitor* : Voltage of the battery, electric current demanded, percentage consumed by the flight controller, meaning that if you connect a battery(ies) that is(are) not fully charged, it will still show 100%.
- GPS Status* : Current GPS status, this depends on the number of satellites achieved and the accuracy of the horizontal position (HDOP). The status changes between NoFix, 3DFix and 3DGPS, the last two indicate that the GPS has reached an optimal state in order to fly. NoFix usually appears when the Aurelia is indoors.

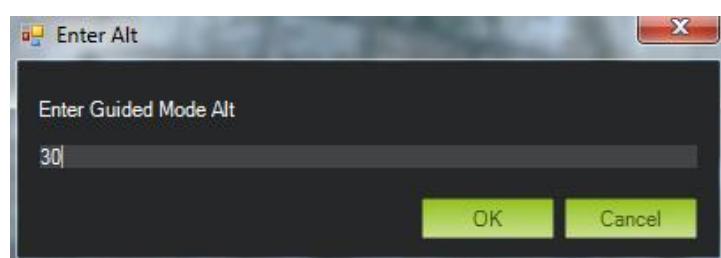
9. *Telemetry messages* : Messages from the flight controller regarding the status and actions of the Aurelia, these messages usually include the firmware version number, arming commands, takeoff, calibrations, etc.
10. *HDOP and satellites of the GPS* : Number of satellites achieved by the GPS and the HDOP rate (Horizontal Dilution Of Precision).
11. *Position and heading (red line) of the drone in the map* : The drone icon shows us the position of the Aurelia on the Earth (using the map) and the red line tells us where the Aurelia is pointing on the map, this line must match the arrow on top of the flight controller.

When flying, you can right click on the map to make your Aurelia fly to that point. Mission Planner will prompt you to set the altitude (in meters by default).



Make sure the altitude is high enough for the Aurelia to clear any obstacles.

If you want to modify the altitude in meters at which it is flying use **Fly to Here Alt**.



9.2 QGroundControl Flight View



1. *Attitude* : Current state of the Aurelia.
2. *Flight mode* : Selected flight mode.
3. *Telemetry messages* : Messages from the flight controller regarding the status and actions of the Aurelia, these messages usually include the firmware version number, arming commands, takeoff, calibrations, etc.
4. *GPS Status, HDOP and achieved satellites* : Current GPS status, this depends on the number of satellites achieved and the accuracy of the horizontal position (HDOP or Horizontal Dilution Of Precision). The status changes between NoFix, 3DFix and 3DGPS, the last two indicate that the GPS has reached an optimal state in order to fly. NoFix usually appears when the Aurelia is indoors. Number of satellites achieved by the GPS and the HDOP rate.
5. *Telemetry signal* : Signal strength between the ground station and the Aurelia, if the transmitter has a ground station and there is a wireless connection to MP, then the percentage we see in QGroundControl is from the transmitter to the Aurelia, not from the computer to the Aurelia.
6. *Battery monitor* : Voltage of the battery, electric current demanded, percentage consumed by the flight controller, meaning that if you connect a battery(ies) that is(are) not fully charged, it will still show 100%.
7. *Virtual horizon (HUD)* : Indicates the level of the Aurelia using the red lines and arrows as a reference.
8. *Heading of the drone* : Where the arrow on the top of the flight controller is pointing to.

9. *Position of the drone in the map and current heading (pointing arrow)* : The red arrow shows us the position of the Aurelia on the Earth and the tip of the arrow tells us where the Aurelia is pointing on the map, this tip must match the front of the Aurelia, which is where the arrow on the top of the flight controller is pointing.
10. *Relative Altitude in meters* : Current altitude of the Aurelia.
11. *Distance to home* : The horizontal distance from where the Aurelia was powered on (home) to where it is currently located, it means that if the Aurelia is circling in the same place this distance will reach a maximum value when the Aurelia is in the furthest point of home but will decrease if it gets closer.
12. *Climb Rate, vertical speed* : Current vertical speed of the Aurelia.
13. *Ground speed, horizontal speed* : Current horizontal speed of the Aurelia.
14. *Flight Time* : Time the Aurelia has been flying, this time starts when the Aurelia detects it took off and ends when it detects it has landed.
15. *Flight distance* : The horizontal distance the Aurelia has moved from home, it means that if the Aurelia is circling in the same place this distance will increase.

9.3 Planning a Mission

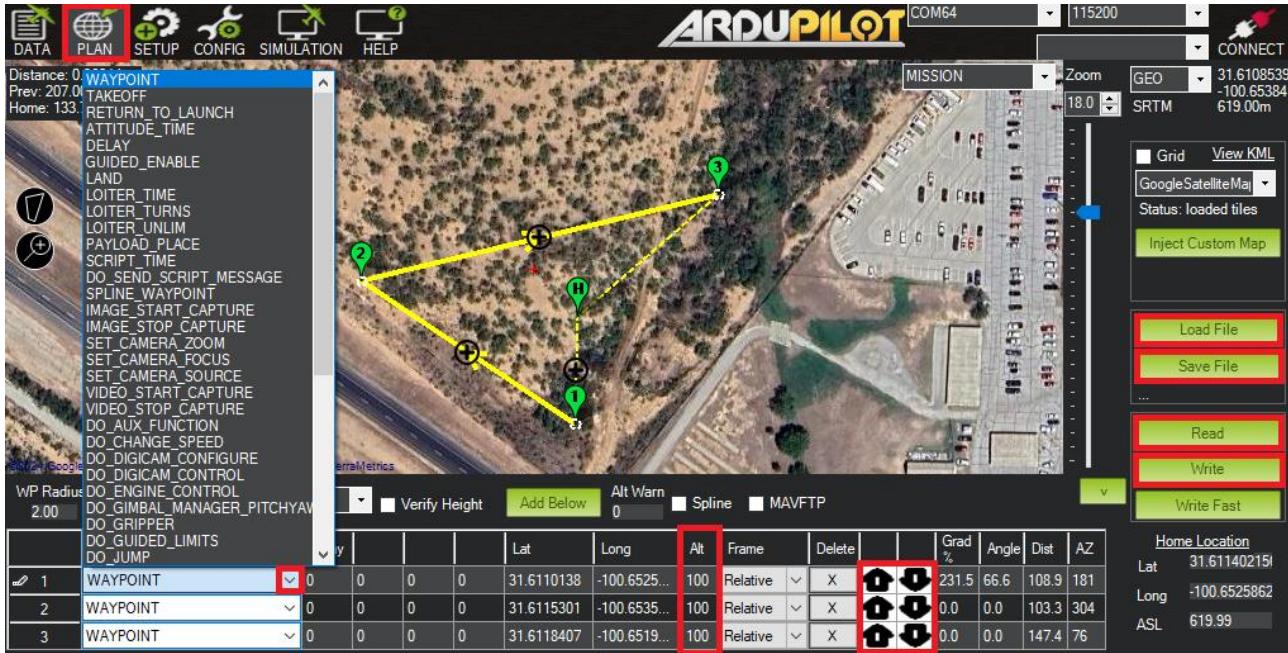
Missions are sets of actions programmed to be executed in a predetermined order. **Keep in mind the Aurelia's operational limits and flight time.** Don't try to perform a mission that would require a longer flight time or distance range than your vehicle is capable of; remember that unfavorable weather conditions will reduce the flight time; monitor your vehicle at all times since it's not capable of avoiding unplanned obstacles and be ready to regain manual control in case of emergency.

The Aurelia can store one mission at a time, uploading a new mission will delete any mission previously saved.

You can plan and upload a mission to your Aurelia by doing the following.

9.3.1 Using Mission Planner

1. Go to the **PLAN** tab.
2. Click on the map to add waypoints, you will see them appear on a list under the map, use the arrow next the command to change the type of it.
3. Use the arrows at the bottom right to change their order and define the altitude of them.
4. Optionally you can click the **Save File** button at the right of the map to save the mission to your computer for future use or edition.
5. Connect the Aurelia with USB (recommended) or wirelessly ([page 22](#)).
6. Click on the **Write** button at the right of the map in order to upload the mission. Now the Aurelia has a mission programmed to be executed anytime you fly in Auto mode.



7. You can use the **Read** button to download a mission from your Aurelia.
8. You can use the **Load File** button to upload a previously programmed mission from your computer to your Aurelia, remember to press Write to upload it after opening it.

9.3.1.1 Basic mission commands

9.3.1.1.1 Takeoff

	Command	Delay	Lat	Long	Alt	Frame	Delete
► 1	TAKEOFF	0	0	0	0	10	X

The vehicle will climb to the specified altitude in meters from its current position. This should be the first command of almost every mission. If the mission is initiated while the copter is already flying, the vehicle will climb to the specified altitude, if the vehicle is already above that altitude, the takeoff command will be ignored and the drone will proceed to the next command immediately.

9.3.1.1.2 Waypoint

	Command	Delay	Lat	Long	Alt	Frame	Delete
► 1	WAYPOINT	0	0	0	10	Relative	X

The vehicle will fly in a straight line to the location specified as lat, long and altitude in meters.

- **Delay:** time of waiting in seconds at the waypoint before moving to the next command.
- **Lat, Long:** the latitude and longitude objectives. If left at zero the current position will be maintained.
- **Alt:** the target altitude above home in meters. If left at zero, it will maintain the current altitude.

9.3.1.1.3 Do change speed

	Command	Type	Speed m/s					Frame	Delete		
1	WAYPOINT	0	0	0	35.9470045	-78.5307455	10	Relative	X		
2	DO_CHANGE_SPEED	0	4	0	0	0	0	Relative	X		

Change the target horizontal speed in meters/sec of the drone.

The speed parameter must always be after a waypoint.

9.3.1.1.4 Return to launch

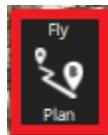
	Command							Frame	Delete		
1	RETURN_TO_LAUNCH	0	0	0	35.9482379	-78.5295868	10	Relative	X		

Command equivalent to RTL flight mode. The vehicle will first climb to the altitude specified in the RTL_ALT parameter (default is 15m) before returning home. The home location is where the vehicle was last armed.

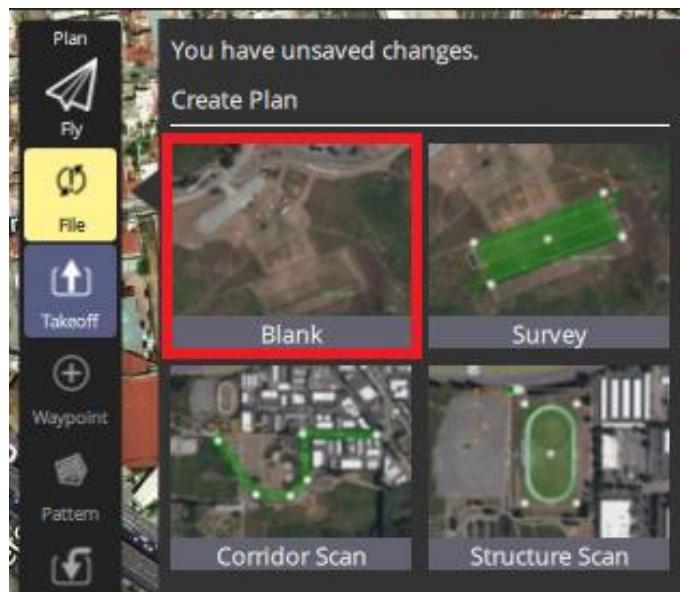
This command takes no parameters and should generally be the last command in the mission.

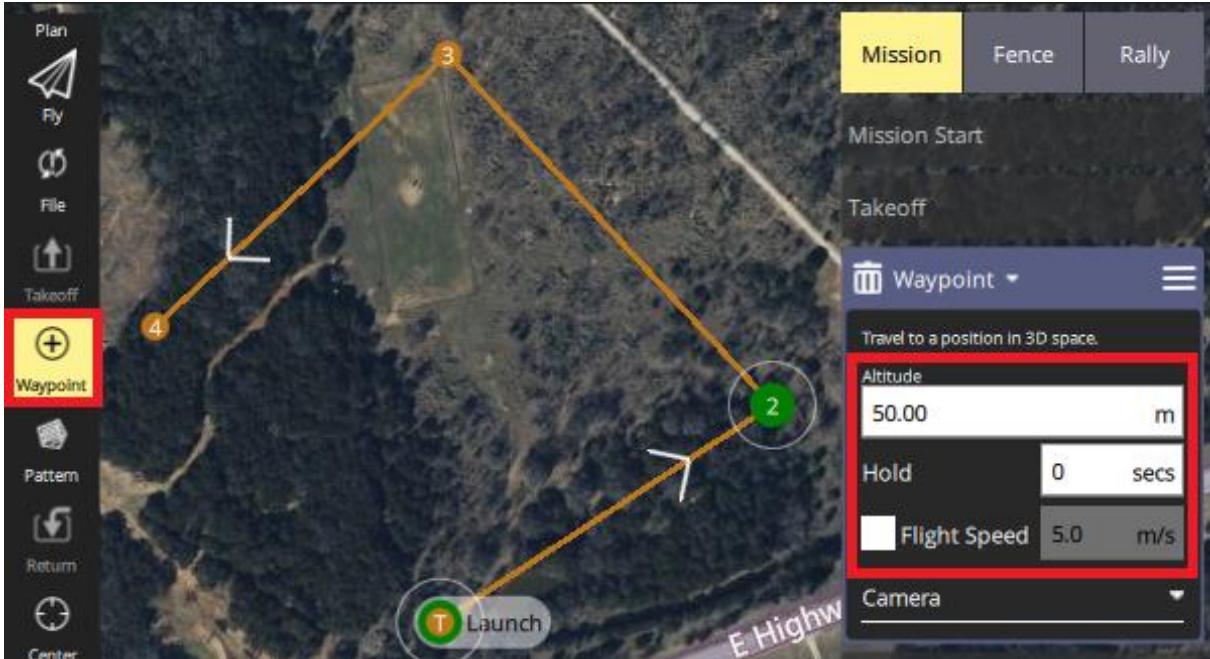
9.3.2 Using QGroundControl

1. On the left side of the screen, click on **Fly Plan**.

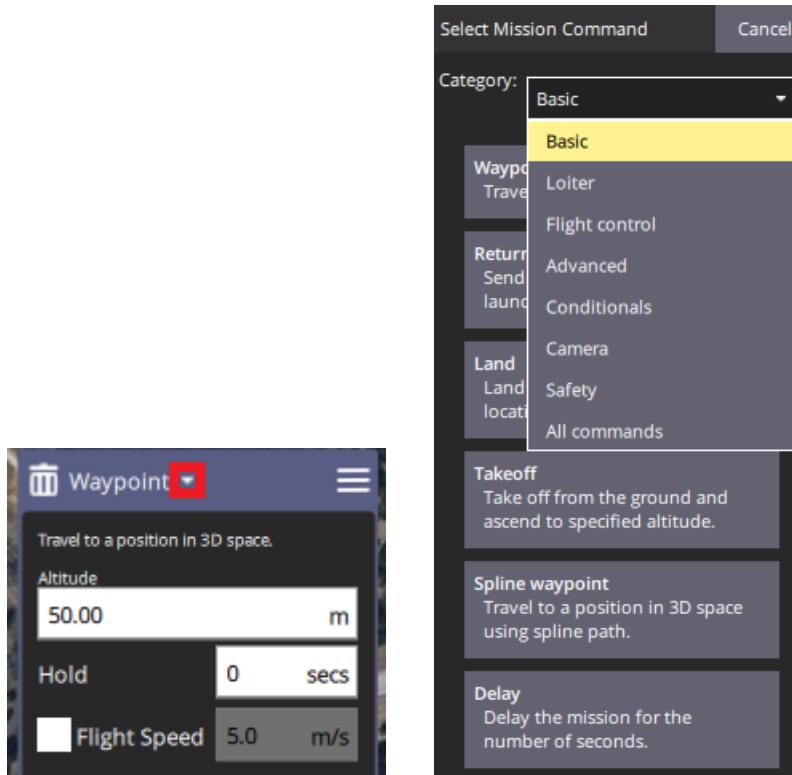


2. Select a **blank** file to start planning your customized mission, click on the **Takeoff option** and then click on the map to place the takeoff command.
3. Select the **Waypoint option** and click on the map to add them, they will appear in order on the right side, within each waypoint you can modify its altitude and horizontal speed at which the Aurelia will fly after reaching that waypoint.





- To change to a different command, click on the arrow to the right of the Waypoint name and select the category you desire, within each category there are different commands that you can use in your missions.



- Optionally you can click on **File** and select **Save** on the left of the map to save the mission to your computer for future use or edition.

6. Connect the Aurelia with USB (recommended) or wirelessly ([page 27](#)).
7. Click on **File** on the left side and select to **Upload** to upload the mission to your Aurelia.



8. You can use the **Download** option to read a mission from your Aurelia.
9. You can use the **Open** button to upload a previously programmed mission from your computer to your Aurelia, remember to press **Upload** to upload it after opening it.

10. Transmitter

In this section you will find information about the transmitters we handle, such as their parts, calibration in Mission Planner and other functions.

The instructions in this manual are for QGroundControl only, Aurelia Aerospace doesn't currently provide support for Solex.

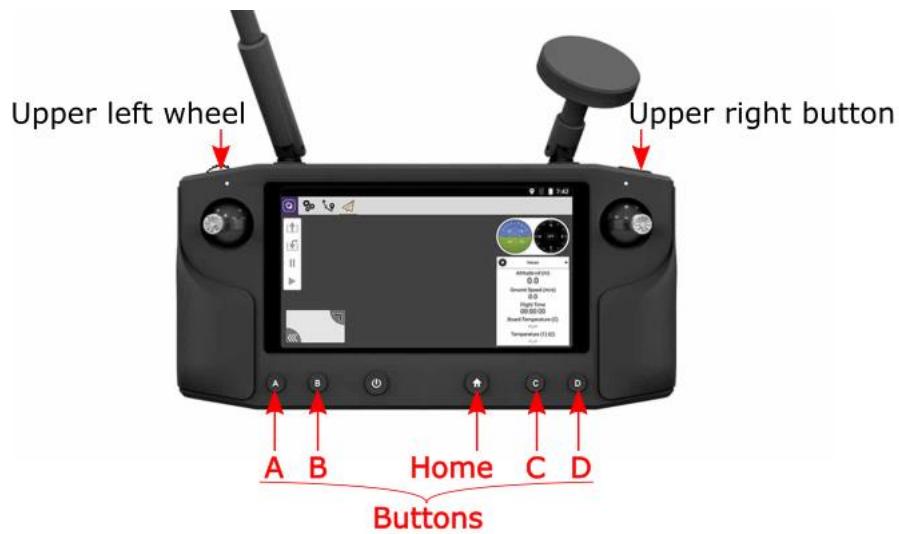
10.1 Transmitter Models

10.1.1 Herelink controller

The Herelink transmitter can be used as a GCS too for monitoring and controlling the vehicle, as well as mission planning, taking the following into account:

1. The Herelink transmitter must be connected to a 5GHz Wi-Fi network in order to download the maps.
2. The Herelink transmitter does not support RTK GPS, so if you're planning on using such a device, you must have a separate computer.

The connection between the vehicle and the Herelink GCS is automatic and it doesn't require any setup.



10.1.1.1 Herelink Flight Data Screen (QGroundControl)

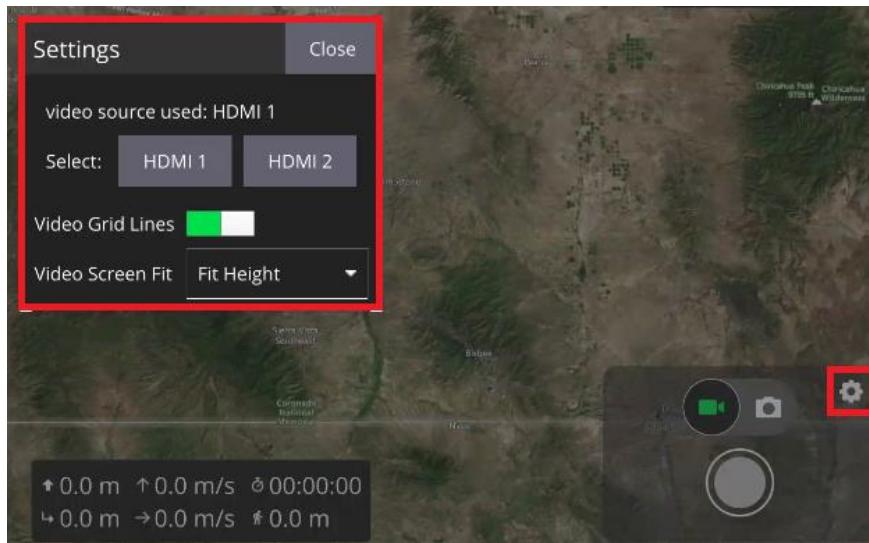
The flight data screen in QGroundControl is very similar to the one in Mission Planner. However, the information is shown in different parts of the screen, as shown in the image.



To get the video feed in the Herelink do the following:

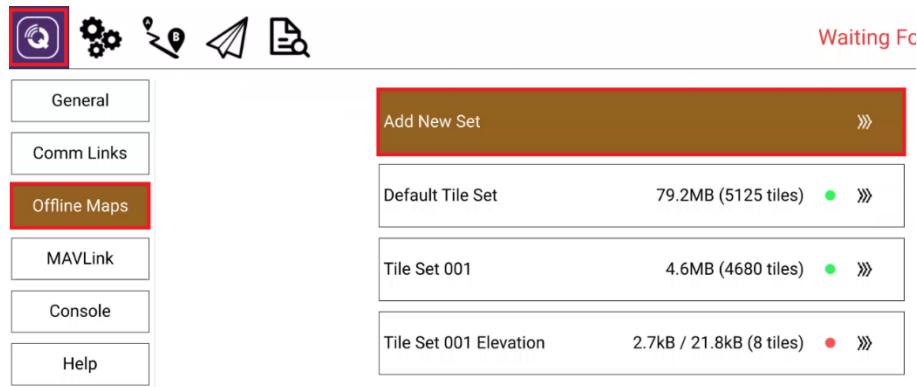
1. Power on the transmitter and the Aurelia.
2. Open QGroundControl in the transmitter and wait for the app to download the parameters of the Aurelia.
3. Wait a minute and the transmitter must be showing the video feed.

4. You can use the Video Stream menu to enable 1080p video.
5. Use the upper left wheel of the transmitter to tilt the camera forward or backward.

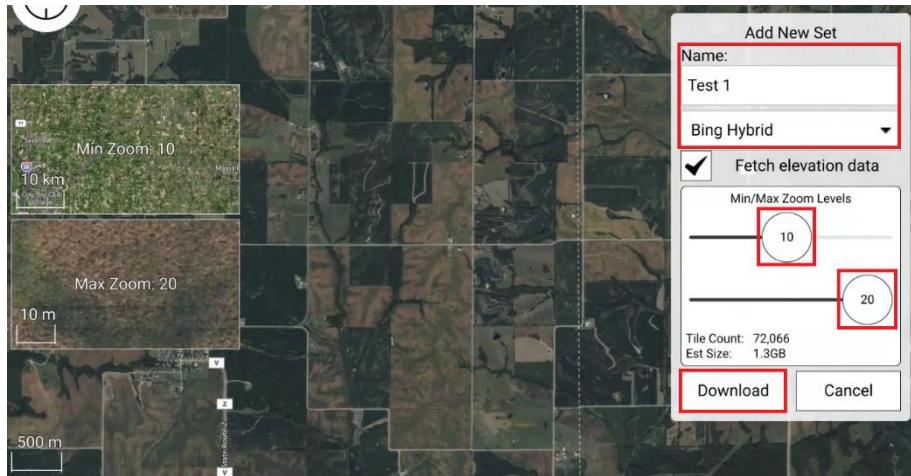


10.1.1.2 Offline Maps with QGroundControl

- 1) With the transmitter connected to the internet, open QGroundControl in the Herelink.
- 2) Press the **Q** icon, then **Offline maps**, **Add New Set**.

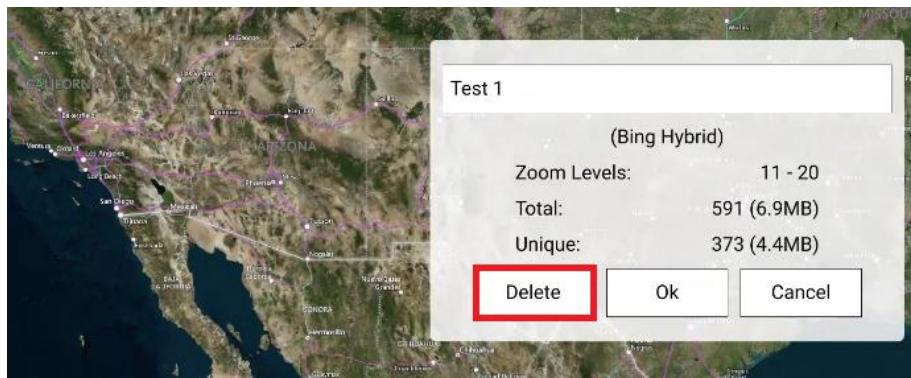


- 3) On the right side of the screen in the first box you can name the field for easy identification. Below you can select which map to reference, as well as the minimum and maximum zoom you will be able to use.



- 4) When you have finished customizing it as desired, click on **Download**.
- 5) If you want to delete the saved map, open it and press **Delete**.

Add New Set	
»»	
Default Tile Set	163.8MB (12833 tiles) »»
Tile Set 001	4.6MB (4680 tiles) »»
Tile Set 001 Elevation	2.7kB / 21.8kB (8 tiles) »»
Test 1	6.9MB (591 tiles) »»

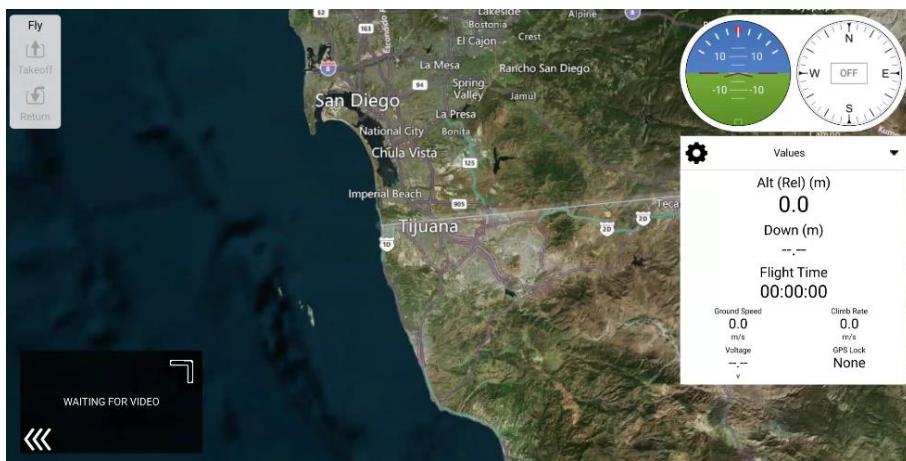


10.1.1.2.1 Use the map

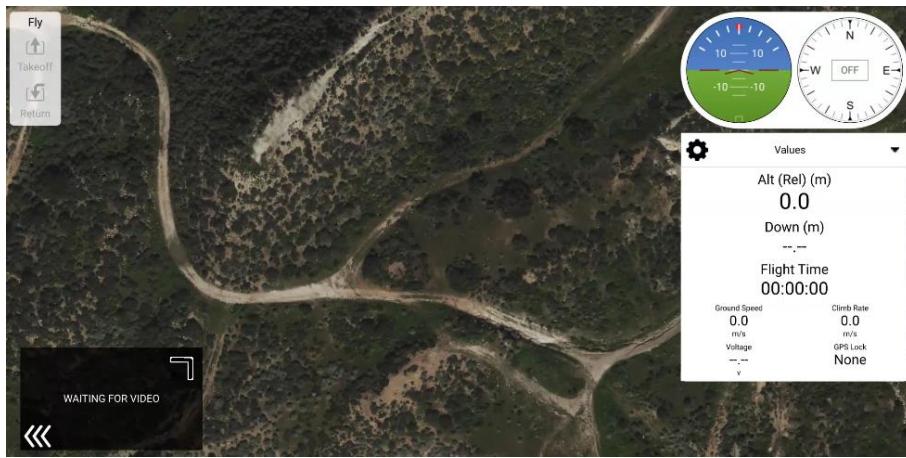
When you are in the field, open QGC and the screens should display a general view, which when zooming in should show the field with the selected reference view.

The parts of the map outside the saved field will be seen but blurry, you will only be able to zoom limitedly in those areas.

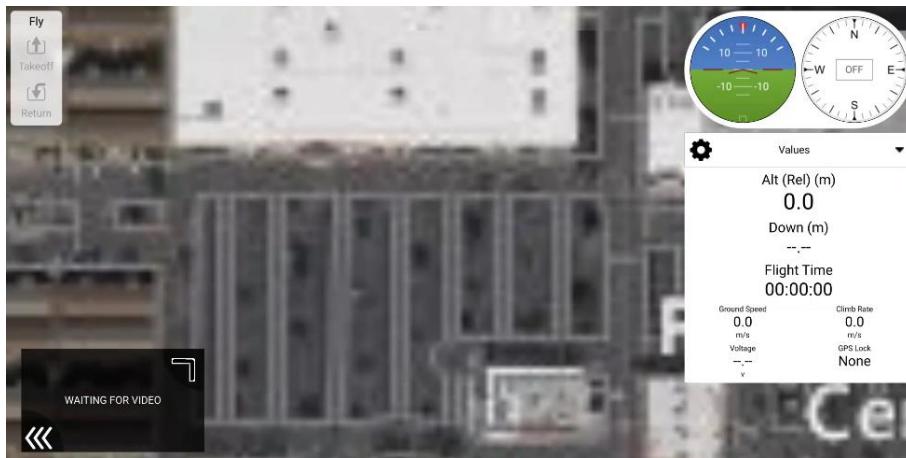
General view:



View of the saved map without internet:



View around the saved map without internet (blurry):



10.1.2 Radiomaster TX16s

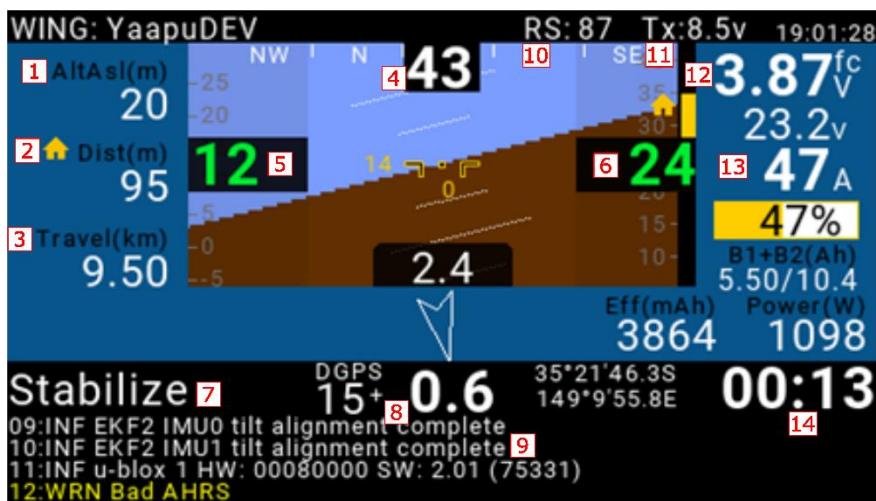
The Radiomaster TX16s is an Open TX based, 16 channel, multiprotocol, RC Transmitter. The following image shows the navigation buttons of the transmitter as well as the RC channel mapping for the auxiliary switches and functions.



10.1.2.1 On-screen telemetry

The Radiomaster TX16s features a color display where you can monitor some of the information shown in the GCS.

- 1) Press and hold the **Power button** on the transmitter until the screen flashes.
- 2) If you receive switch warnings, move the switches to their startup positions until the warnings disappear.
- 3) If you receive a Failsafe not set warning press the **RTN** button to ignore it. **Don't worry: failsafe settings are programmed in the autopilot, no the transmitter.**
- 4) You can use the **PAGE** button to navigate through the screen. Press the **PAGE** button until you get to the telemetry screen (shown in the image below).
- 5) You can use the **SA** switch to switch between the three telemetry screens available.



1. *Absolute Altitude in meters* : Current altitude of the Aurelia ASL (At Sea Level).
2. *Distance to home* : The horizontal distance from where the Aurelia was powered on (home) to where it is currently located.
3. *Flight distance* : The horizontal distance the Aurelia has moved from home.
4. *Heading of the drone* : Where the arrow on the top of the flight controller is pointing to.
5. *Ground speed, horizontal speed* : Current horizontal speed of the Aurelia.
6. *Relative Altitude in meters* : Current altitude of the Aurelia.
7. *Flight mode* : Selected flight mode.
8. *GPS Status, achieved satellites and HDOP* : Current GPS status, this depends on the number of satellites achieved and the accuracy of the horizontal. Number of satellites achieved by the GPS and the HDOP rate.
9. *Telemetry messages* : Messages from the flight controller regarding the status and actions of the Aurelia, these messages usually include the firmware version number, arming commands, takeoff, calibrations, etc.
10. *Telemetry signal* : Signal strength between the ground station and the Aurelia.
11. *Remaining transmitter battery* : The fully charged battery is 8.4v and should not go below 6v.
12. *Flight controller voltage* : Flight controller power.
13. *Battery monitor* : Voltage of the battery, electric current demanded, percentage consumed by the flight controller, meaning that if you connect a battery(ies) that is(are) not fully charged, it will still show 100%.
14. *Virtual horizon (HUD)* : Indicates the level of the Aurelia using the black/yellow lines as a reference.
15. *Flight Time* : Time the Aurelia has been flying, this time starts when the Aurelia detects it took off and ends when it detects it has landed.

10.1.2.2 Binding



The steps described in this section have already been performed on your drone, if our team indicates that it is necessary to do it again, please follow the steps in this section.

Once you have got familiar with the transmitter and its buttons, switches and sticks, the next step is to establish a link between the transmitter and the receiver installed in your vehicle.

In order to bind the TX16s transmitter with the RX8R-Pro receiver you have to do the following:

You may need help from another person to make this easier.

1. Power off your Aurelia.
2. Locate the **RX8R receiver** and the **bind button F/S**, it's a small device located inside the drone attached to the top frame.



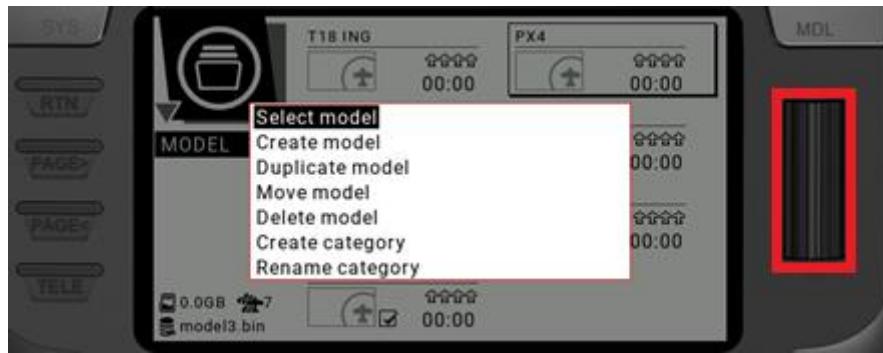
3. Power on your transmitter.
4. On your transmitter, press on **RTN** until you are on the main screen.



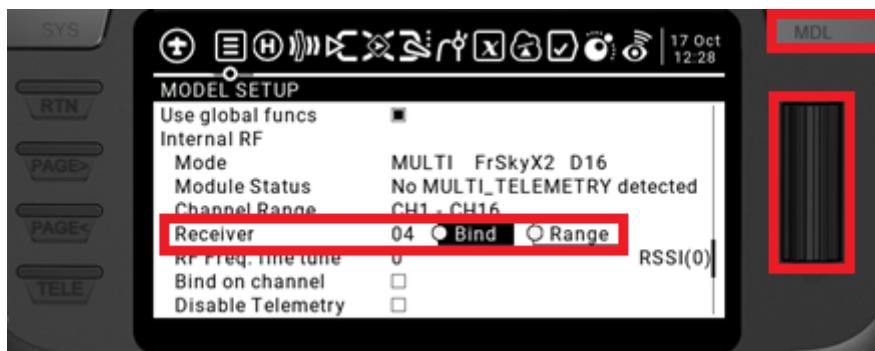
5. Long press on the **scroll wheel** and click on **Model Select**.



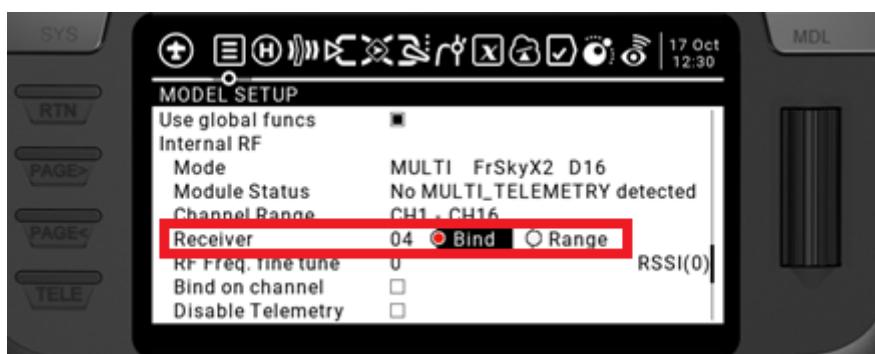
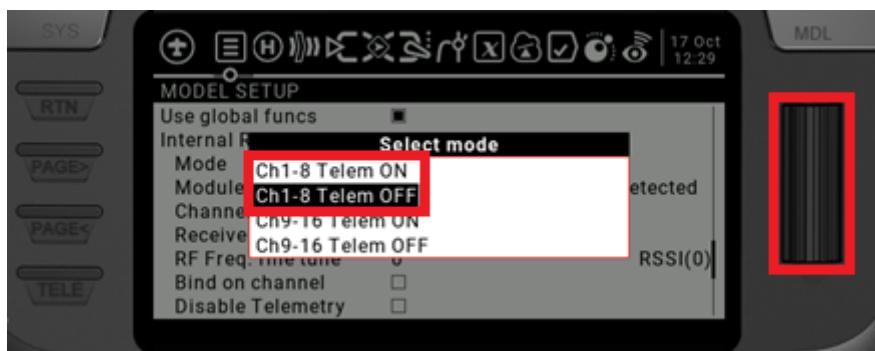
6. Use the **scroll wheel** to place you in the model you have, long press and click on **Select Model**.



7. Long press on **MDL** and use the **scroll wheel** to locate the Receiver section and select **Bind**.



8. Select the option **Ch 1-8 Telem ON** and the circle next to **Bind** will turn red.



9. Use a small hex key, a paperclip or anything that fits to press and hold the **bind button (F/S)** on the RX8R receiver (marked with the following sticker).



10. Power on your drone while still holding the F/S button. It should go into bind mode with solid red and green LED once it is in bind mode you can let go of this button.
11. When the red LED on the receiver starts flashing, reboot the drone and the receiver should light up solid green only, indicating that the receiver and controller have been paired.
12. In the transmitter, the circle next to Bind will turn white.

10.1.3 Skydroid H16

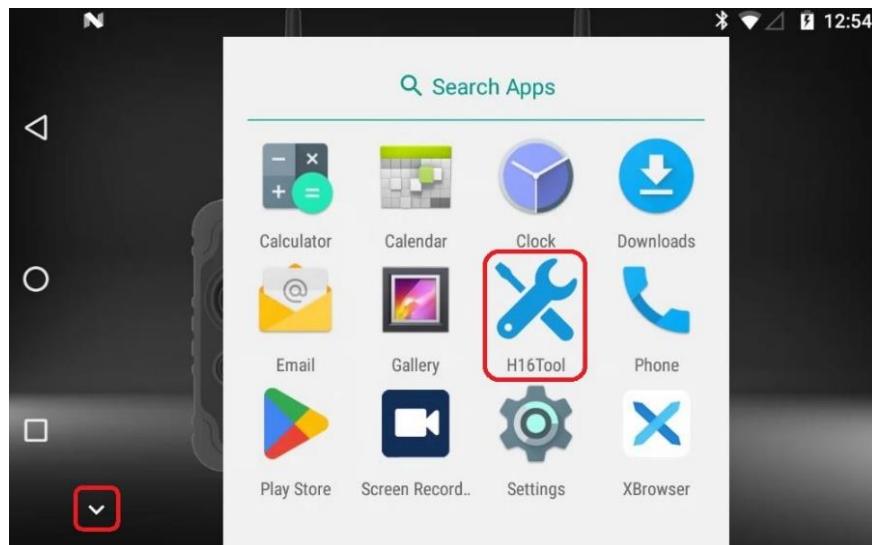
The Skydroid H16 allows you to manually fly your Aurelia, view a live video feed from the aircraft at all times, and program automated missions on a Google Maps overlay.



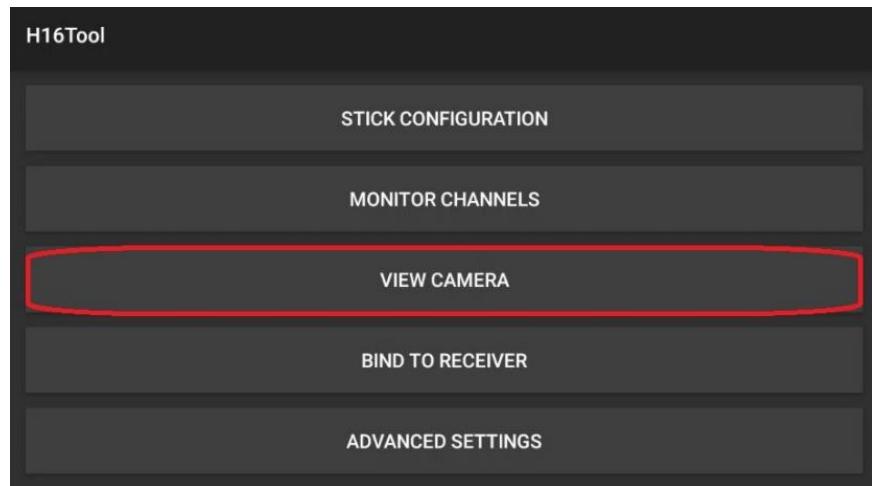
For this transmitter you can also refer to [section 10.1.1.2, pages 50-52](#) regarding offline maps.

10.1.3.1 Video Stream

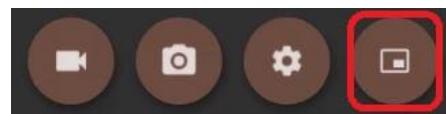
1. To view the camera, open the **H16 tools application** located in the system menu.



2. Select **View Camera**.



3. On the bottom menu select the marked icon to minimize the frame.



4. Now you can open QGC, wait for it to download the parameters of the Aurelia and visualize the camera.

10.2 Jeti DS-12

The Jeti Duplex DS-12 is one of our blue-accepted transmitters which allows you to manually pilot your Aurelia at all times.



10.2.1 On-screen Data



The elements to be displayed on the screen are the following:

1. Current Flight Mode
2. Drone image
3. Transmitter battery
4. Model name and number of pages
5. Flight time timer (Click on *Start* to trigger it when the drone takes off, use the same button to pause it when landing, Click on *Clr* to restart the timer)
6. User name, Pilot's name (To modify it, open the *MENU* and go to *Main menu, System, Configuration, User Name*)

10.3UXV Navigator Tab 3

The UXV Navigator Tab 3 is our advanced blue-accepted transmitter, which allows you to manually fly your Aurelia, view a live video feed from the aircraft at all times, and program automated missions on a Google Maps overlay.



For this transmitter you can also refer to [section 10.1.1.2, pages 50-52](#) regarding offline maps.

10.4 Radio Calibration



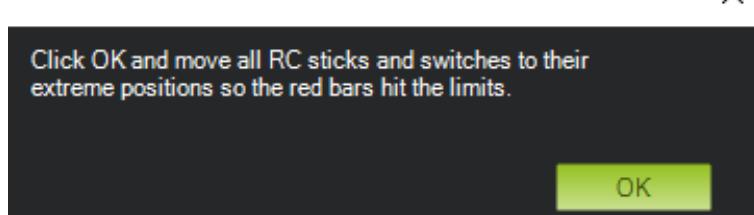
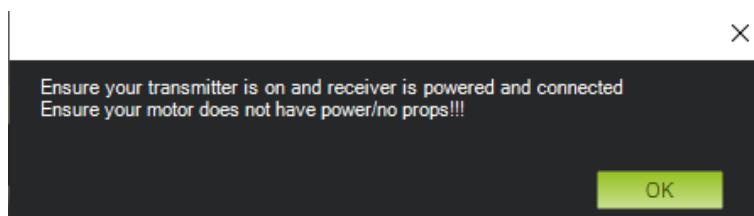
Do not press the safety switch to avoid the motors from spinning, the motors should beep indicating that they aren't enabled.

In case technical support requests a radio calibration in Mission Planner, the following steps must be followed:

1. Connect the Aurelia to Mission Planner following the steps from [section 8.2.1, page 22](#).
2. When MP finished downloading the parameters, go to the tab **SETUP, Mandatory Hardware, Radio Calibration**.



3. Move the sticks of your controller in order to check that it is recognizing the movements. If not power off your Aurelia and transmitter and [contact us](#) for support (page 113).
If yes, press **Calibrate Radio**, the following windows will appear, click **OK** in both cases.

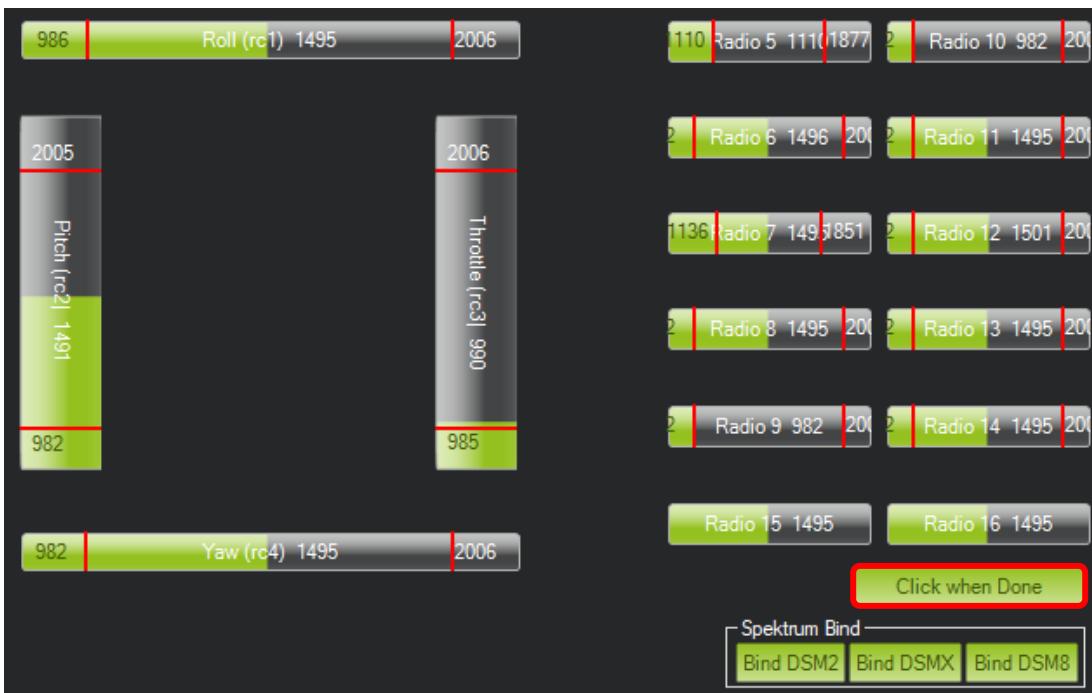


4. When it starts you have to move the sticks, buttons, switches and wheels/knobs to their maximum and minimum values, and then trim them to a middle position.

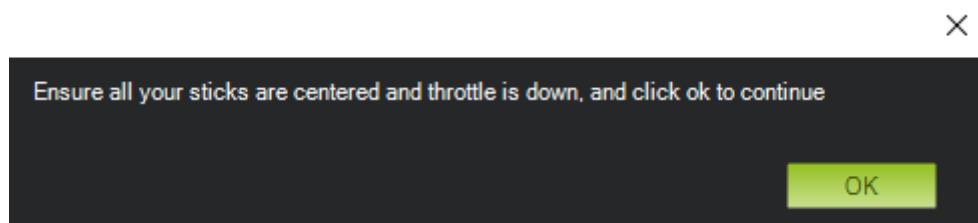
Some switches or buttons have only high and low values, leave them at low.

5. The channels will have a red line indicating the maximum and minimum limits, once finished, hold the left stick down and center and press **Click when Done**.

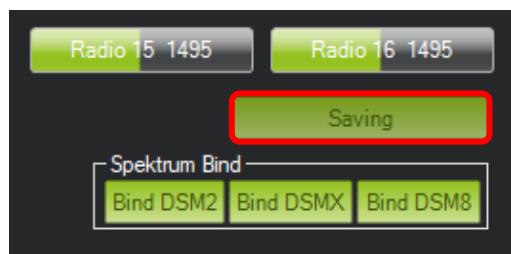
Do not let go of the stick yet.

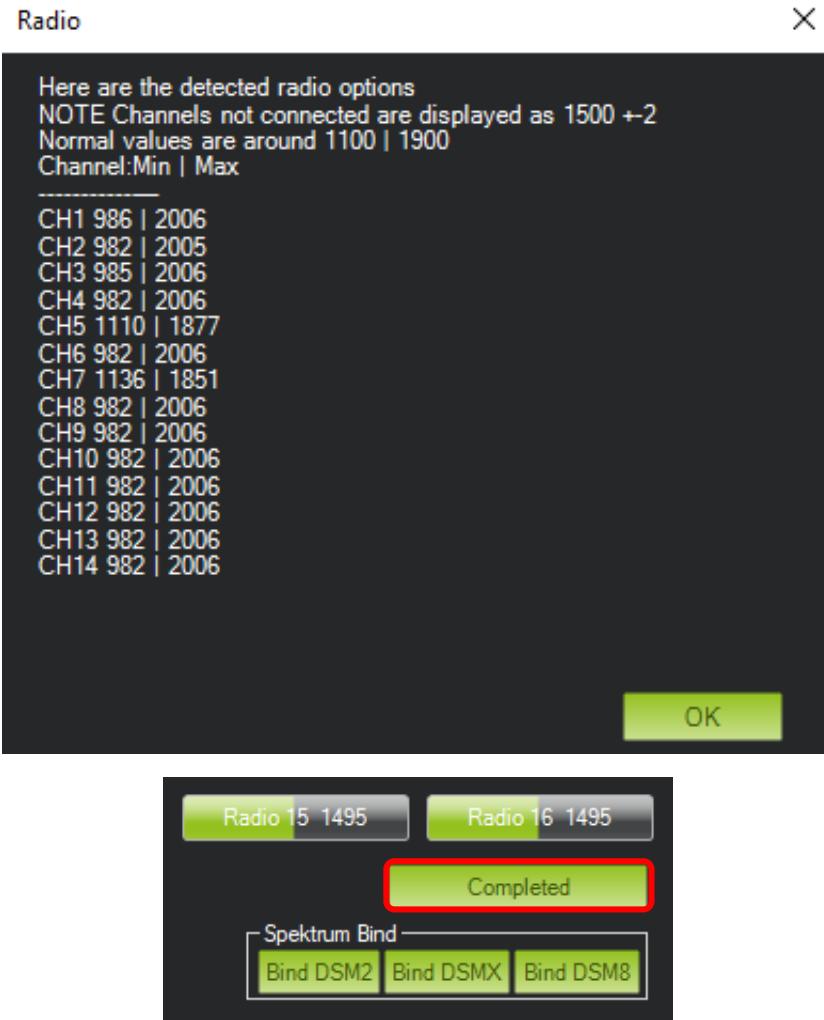


6. The following image will appear, without releasing the left stick press **OK**.



7. The *Click when Done* button will say *Saving*, then a window will open with the values, press **OK** and the button will change to *Completed*.





8. Now you can release the left stick and the calibration is completed.

11. Controls

The Aurelia can be flown manually using the Transmitter sticks, to control the vehicle's movement, and attitude, and the buttons/switches for flight mode changes.

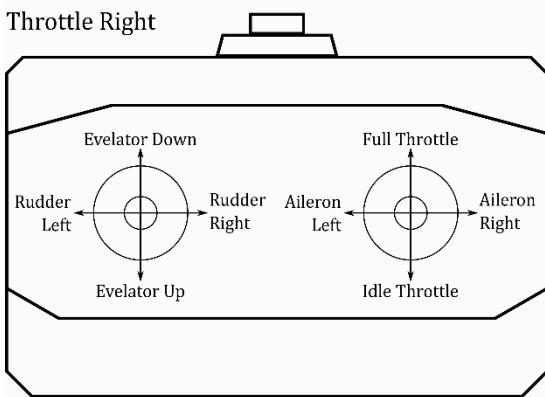
Both sticks return automatically to the middle. The following sections explain the general use of the sticks when flying manually, for detailed information on how the Aurelia will respond to stick input, read on to the [Flight Modes section](#) (page 65).

11.1 Sticks Mode

There are 4 types of stick modes, **we use and recommend number 2**. The following sections are based on Mode 2.

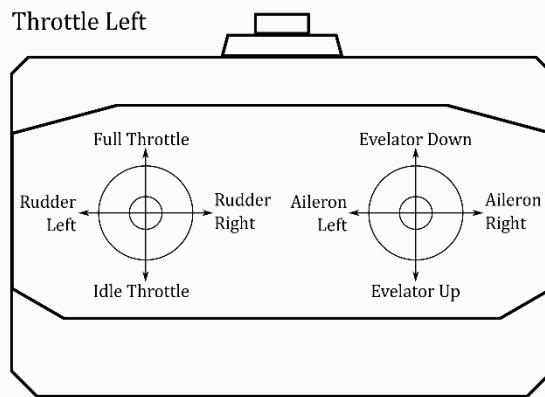
MODE 1

Throttle Right



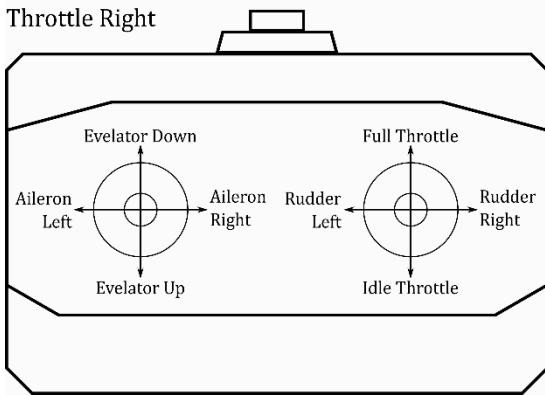
MODE 2

Throttle Left



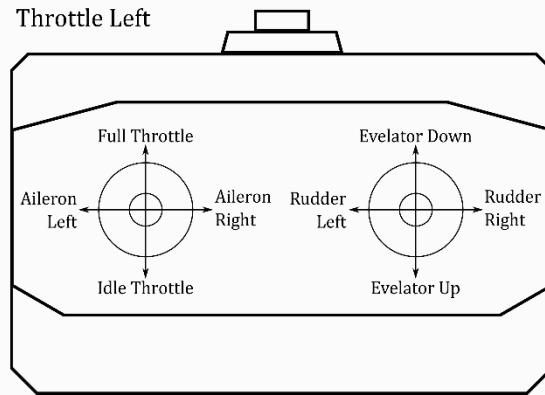
MODE 3

Throttle Right



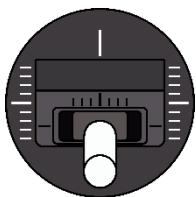
MODE 4

Throttle Left

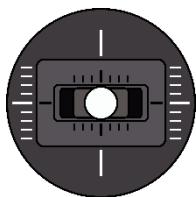


11.2 Throttle (Altitude)

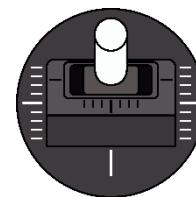
The throttle input (left stick, vertical movement) controls the altitude of the Aurelia, its behavior is fairly similar in **AltHold**, **PosHold** and **Loiter** modes and works as follows:



Gain Altitude



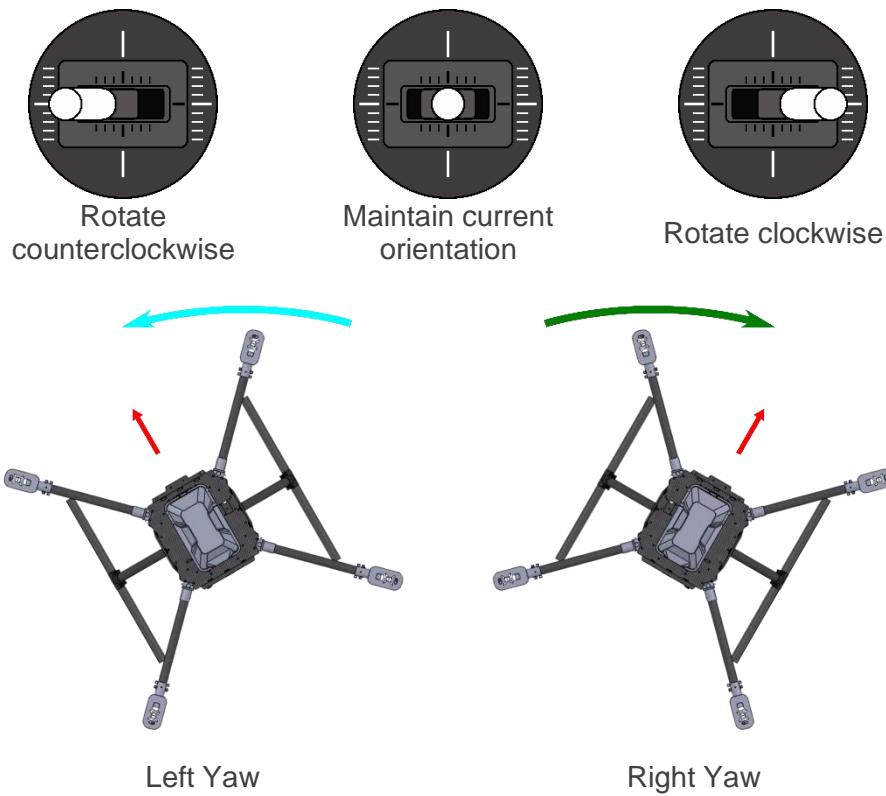
Maintain current altitude



Descend

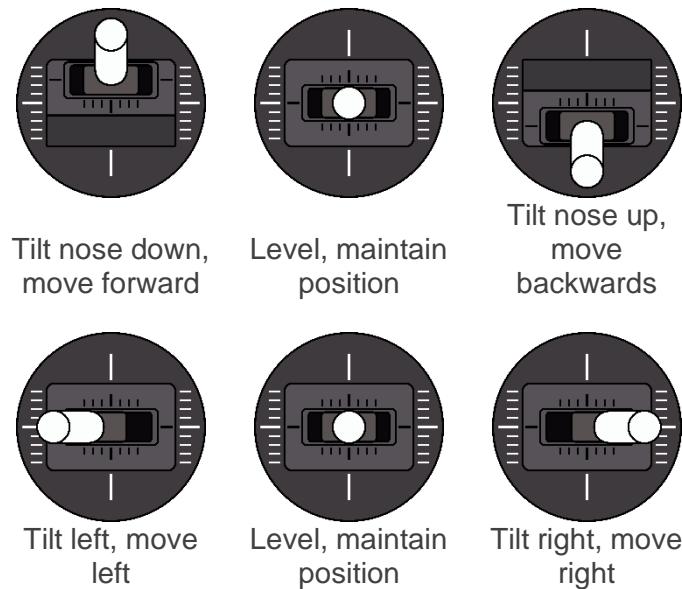
11.3 Yaw

The yaw input (left stick, horizontal movement) controls the orientation of the Aurelia by rotating it around its vertical axis (yaw axis).



11.4 Pitch and Roll

The pitch and roll input (right stick, vertical and horizontal movements respectively) control the horizontal position of the Aurelia.



12. Flight Modes

12.1 Herelink controller

With the Herelink version, the Aurelia comes programmed with five flight modes that can be selected with buttons A, B and C in the front of the transmitter. The autonomous modes (Auto and RTL), as well as the manual modes (Loiter and PosHold) require GPS lock.

Button / Press	A Short press	A Long press	B Short press	B Long press	C Short press	C Long press
Flight mode	Loiter	PosHold	Auto	RTL	AltHold	AltHold
<i>Maintains altitude</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>GPS lock required</i>	Yes	Yes	Yes	Yes	No	No
<i>Manual Mode</i>	Yes	Yes	No	No	Yes	Yes
<i>Armable</i>	Yes	Yes	No	No	Yes	Yes

12.2 Radiomaster TX16s & Skydroid H16

With the Radiomaster version and Skydroid H16, the Aurelia comes programmed with five flight modes that can be selected with the 6 buttons in the front of the transmitter.

Button / Press	1	2	3	4	5	6
Flight mode	RTL	PosHold	AltHold	Auto	Loiter	AltHold
<i>Maintains altitude</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>GPS lock required</i>	Yes	Yes	No	Yes	Yes	No
<i>Manual Mode</i>	No	Yes	Yes	No	Yes	Yes
<i>Armable</i>	No	Yes	Yes	No	Yes	Yes

12.3 Jeti Duplex DS-12

With the Jeti Duplex DS-12 version, the Aurelia comes programmed with five flight modes that can be selected with 2 of the switches in the top left of the transmitter.

SWITCHES		
SC		
SA		
	AltHold (armable)	AltHold (armable)
	Loiter (armable, GPS)	PosHold (armable, GPS)
	Auto (GPS)	RTL (GPS)

12.4 UXV Navigator Tab 3

With the UXV Navigator Tab 3 version, the Aurelia comes programmed with five flight modes that can be selected with the right D-Pad of the transmitter.

Right D-Pad	→	↑	←	↓	Press
Flight mode	AltHold	Auto	RTL	PosHold	Loiter
Maintains altitude	Yes	Yes	Yes	Yes	Yes
GPS lock required	No	Yes	Yes	Yes	Yes
Manual Mode	Yes	No	No	Yes	Yes
Armable	Yes	No	No	Yes	Yes

12.5 Loiter and PosHold (GPS mode)

In **Loiter** mode the vehicle will maintain its position, altitude and heading when the sticks are centered. In this mode, the vehicle will behave as follows:

The throttle input controls the climb and descent speed of the vehicle, when the throttle stick is centered, the vehicle will maintain its current altitude; The roll and pitch inputs control the horizontal position and speed of the vehicle; and the Yaw input controls its heading.

In **PosHold** mode, the right stick controls the lean angle directly, allowing for faster maneuvers, however it requires more time and space to break after a high-speed run.

12.6 Auto (Fly a mission)

In Auto mode, the Aurelia will perform a previously programmed mission. The planning a mission section of this manual, provides information on how to program and upload a mission to the flight controller, [section 9.3, page 44](#).

During an automatic mission, the Aurelia will follow the path marked in the ground station and will not avoid obstacles by itself. **Monitor your vehicle at all times and be ready to regain manual control if necessary.**

You can't arm in Auto mode. You have to arm in any of the armable modes (Loiter, PosHold, AltHold), take off and then switch to Auto mode.

It's strongly recommended to run a test flight before performing an automatic mission, in order to make sure the Aurelia is responding properly.

12.7 RTL (Return to launch)

When this mode is activated, the Aurelia will climb to a given altitude (15 m by default but can be modified) and return to the point where it was armed. Then slowly descend, land and disarm the motors by itself.

Be ready to regain manual control and land manually if the Aurelia is descending too fast or far from the launch point.

12.8 Land (Automatic landing)



Make sure that the Aurelia is above a surface where it can land as when this flight mode is activated, since the Aurelia will immediately start descending.

When this flight mode is activated, the Aurelia will descend to a specified altitude and then continue descending at a set speed, land and disarm the motors by itself.

Use the following table as a reference for your Aurelia model:

Aurelia Model	Final Altitude	Landing Speed
X4, X6, X6 Pro V2, X6 MAX, X8	10 meters	50 cm/s
X8 MAX	2 meters	18 cm/s

This parameter is not defined in the transmitter channels but can be triggered from the ground station.

12.9 AltHold (Manual, No GPS)

AltHold is a manual flight mode that uses the built-in barometer to ensure the Aurelia maintains its altitude when the throttle stick is centered. In this mode it will not hold its position. In AltHold mode, the Aurelia will behave as follows:

The throttle input controls the climb and descent speed of the Aurelia, when the throttle stick is centered, the Aurelia will maintain its current altitude; The roll and pitch inputs control the lean angle of the Aurelia, when the right stick is centered, the Aurelia will level, but will not maintain its position; The yaw input controls the heading of the Aurelia, when the stick is centered, the vehicle will maintain its current heading.

Consider that without GPS the Aurelia can't stop entirely by itself and will drift under strong winds.

13. Failsafe



Be ready to land the vehicle if any of the following scenarios occur.

The Aurelia has a number of software safety features that we refer to as the Failsafe configuration. This setting allows the Aurelia to perform some actions in case of any of the following situations occur: loss of communication link with the transmitter or ground control, low battery, loss of GPS signal or loss of a motor during flight.

13.1 Transmitter Signal Loss

If the Aurelia loses connection with the radio transmitter, it will try to automatically return to its launch site.

13.2 Ground Station Link Loss

If the Aurelia loses communication with the ground station, the vehicle will try to return to its launch site, unless it is in auto mode and has a stable transmitter connection.

13.3 Low Battery

If the voltage of the standard battery(ies) drops to 21.2 volts or 20.05 volts for the long endurance battery(ies), or the battery monitor reaches a 20% of remaining battery capacity, the vehicle will try to perform a return to launch. You will recognize this failsafe condition for the fast-repeating beeping alarm tones the Aurelia produces under these circumstances.

In the case of a Low battery situation, it's advisable to regain manual control and immediately land the Aurelia.

13.4GPS Signal Loss

If the GPS of the Aurelia loses signal, the vehicle will change to the flight mode AltHold.



In case this failsafe is activated together with the connection loss or low battery failsafe, the Aurelia will switch to LAND flight mode and land immediately.

13.5Loss of a motor during flight

In the hexacopters and octocopters Aurelia, when a motor stop spinning, the flight controller will shut down the opposite motor and switch to LAND flight mode in order to land immediately, in case the Aurelia is about to land on an unfavorable surface, switch to LOITER mode to reposition the Aurelia and land it either manually or automatically.

In case you have an Aurelia X4 quadcopter, due to the lack of redundant motors, your Aurelia will go into an uncontrollable spin and start descending, in this scenario do not attempt to compensate the spin as you will only have minimal control of roll, pitch and throttle. Use minimal inputs and try to make a controlled crash away from anyone and anything.

13.6Regain manual control after a Failsafe is triggered

The first three failsafe scenarios will override the transmitter and trigger an RTL, causing the Aurelia to fly back and land in the same spot where it took off, and in the GPS loss failsafe the Aurelia will hold its altitude and be fully manual.

If you want to regain manual control, all you have to do is change the flight mode using the Flight Mode buttons/switches. Consider that in the case of a Transmitter Signal loss you must wait until the Aurelia gets within transmitter range to regain manual control.

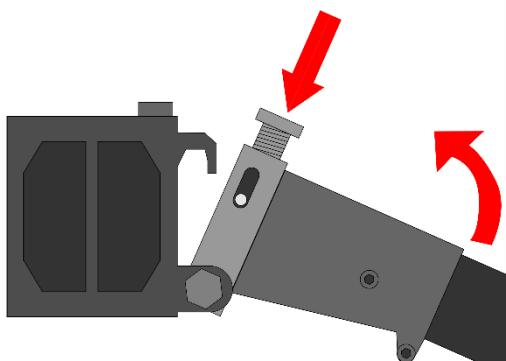
14. Preflight Setup

There are a few steps you need to follow when preparing to fly your Aurelia. Read sections 14 and 15 to learn about this information.

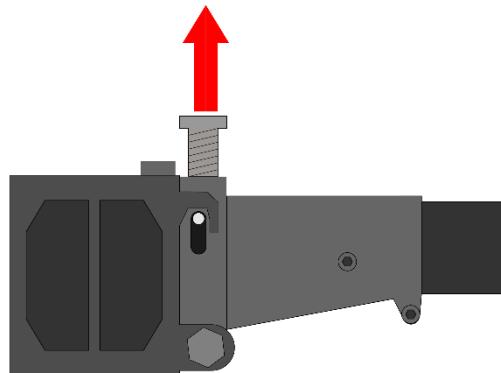
In [section 21.4, page 111](#) you will find a Preflight Checklist which you can use before each flight, also within Aurelia Assist you can find a checklist ready to use, go to the following link to access it: <https://aurelia-assist.aurelia-aerospace.com/flight-checklist>

By using the Meta Glasses while flying, you can record your point of view. This way you have a record of every flight.

1. Press the silver pin in the arm joint to release the lock, move the arm to flying position and release the pin to lock the arm.



Move the arm while holding the lock pin down



Release the pin to lock the arm

2. **Place the battery(ies) inside the battery box.** Use the Battery Health Checker from the Flight Kit to check the voltage of your batteries before connecting them to your Aurelia.



Never fly with partially charged battery nor connect a battery with different charge levels.

Flying with a partially charged battery will cause the Aurelia to fail to estimate the remaining battery percentage.

3. **Balance the payload** so the Aurelia can fly without forcing the motors. Use the following method to accomplish that:

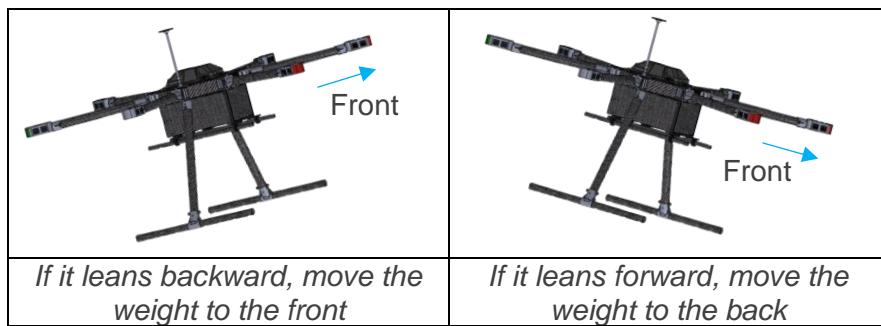


Failing to perform this procedure (specially under heavy payloads) may cause your ESCs or motors to burn out.

- a) Lift the Aurelia by the center arms with your fingers.
- b) Check if the Aurelia leans forwards or backwards.
- c) Place the Aurelia on the ground and adjust the weight by moving the battery(ies) or any other payload you have. If the Aurelia was leaning forward, you must move the weight to the back and if it leaned backwards, you must move the weight to the front.
- d) After moving the weight, repeat from step A until the Aurelia is balanced.



Lift from the center with your fingers depending on the model you have



4. **Unfold the propellers** in order to avoid vibrations during take-off.



Unfold the propellers before flying

5. **Secure the compass mast** and make sure that it's pointing forward (failing to do so will cause orientation issues during flight).

15. Power On

Power on your Aurelia in the spot where it's going to take off.

For safety reasons, always perform the power on steps in the order listed below.

1. Turn on your transmitter. **Always power on the transmitter first and then the drone.**
2. Make sure the battery(ies) is(are) fully charged.
3. Connect the battery(ies) to the XT90 yellow plug(s) of the Aurelia. The Aurelia will play musical tones.
4. The motors should start beeping.
5. Leave the Aurelia still at least 2 minutes as it initiates its sensors and finds GPS signal.

15.1 Safety switch

The safety switch controls whether the Flight Controller can make the motors spin or not.

- **If the safety switch is blinking the motors are disabled and should beep.**
- **If the safety switch is solid red the motors can spin and will not beep.**

You can change the state of the safety switch by pressing and holding it.

16. Arming, Take-off, Landing & Disarming



The Aurelia should not be armed unless all the steps in the [Preflight Setup](#) and [Power On](#) sections (page 68-70) have been performed.

Don't arm if you haven't read this manual in its entirety.

Do not use Pitch or Roll during the commands described in this section.

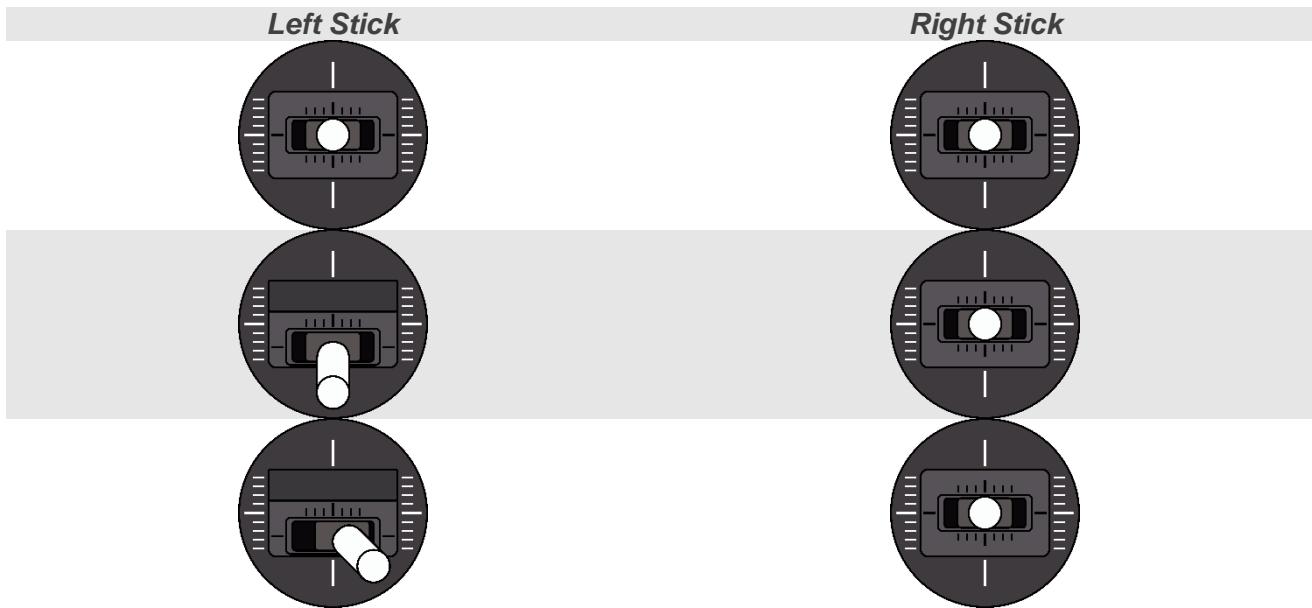
16.1 Arming & Take-off

Arming means allowing the motors to start spinning. **When arming, the Aurelia must take off immediately in order to avoid vibrations.**

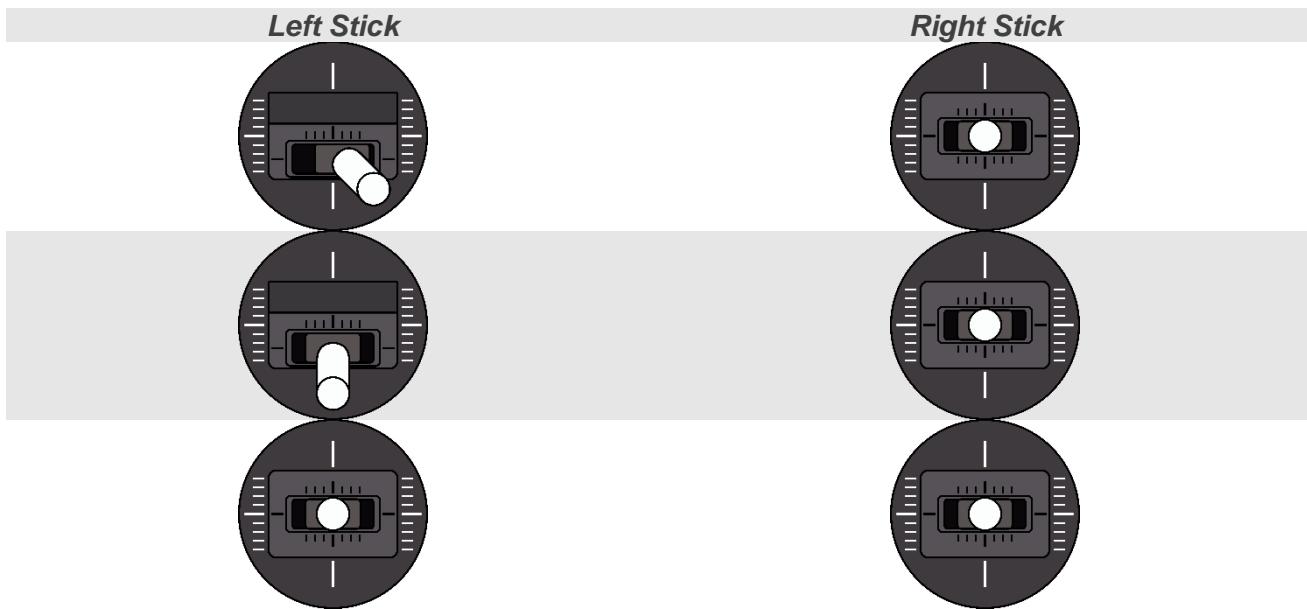
For safety reasons, when the Aurelia is powered, the motors are disabled and need to be armed so it can take off.

The steps to arm and take-off the Aurelia must be performed in the following order:

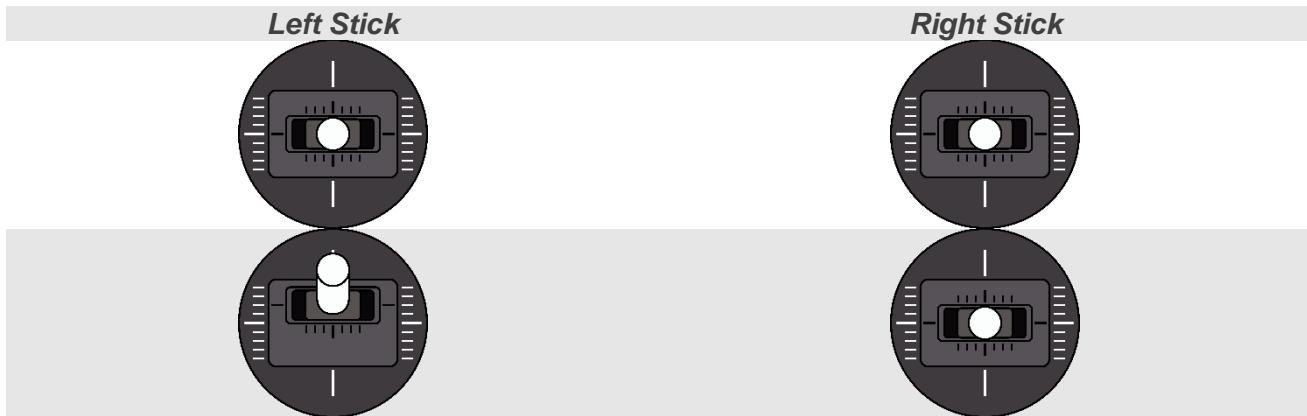
1. Use the Anemometer from the Flight Kit to check the wind speed before flight. **Avoid taking off if the wind speed on the ground is higher than 5 m/s.**
2. Press the safety switch until it stops blinking, the motors should stop beeping. If any of the motors continues beeping after the safety switch LED is solid red, disconnect the battery(ies) and [contact Aurelia Aerospace](#).
3. Select an armable mode on your transmitter, we recommend Loiter for it's the easiest.
4. Lower and hold the Throttle for 3-4 seconds, without lifting it move the Yaw to the right and hold it for 5 seconds or until you hear a long beep.



5. Without lifting the Throttle return the Yaw to center and carefully return the Throttle to the middle.



6. Now raise the Throttle quickly and steadily to 75% of it until the Aurelia reaches a minimum height of 5 meters. **It is highly recommended to take off the Aurelia at a minimum height of 5 meters to avoid ground effect.**



7. You can now use Pitch, Roll, Yaw and Throttle as desired to change the position of the Aurelia. **Use your anemometer at all times and consider wind gusts.**

16.2 Manual Landing & Disarming



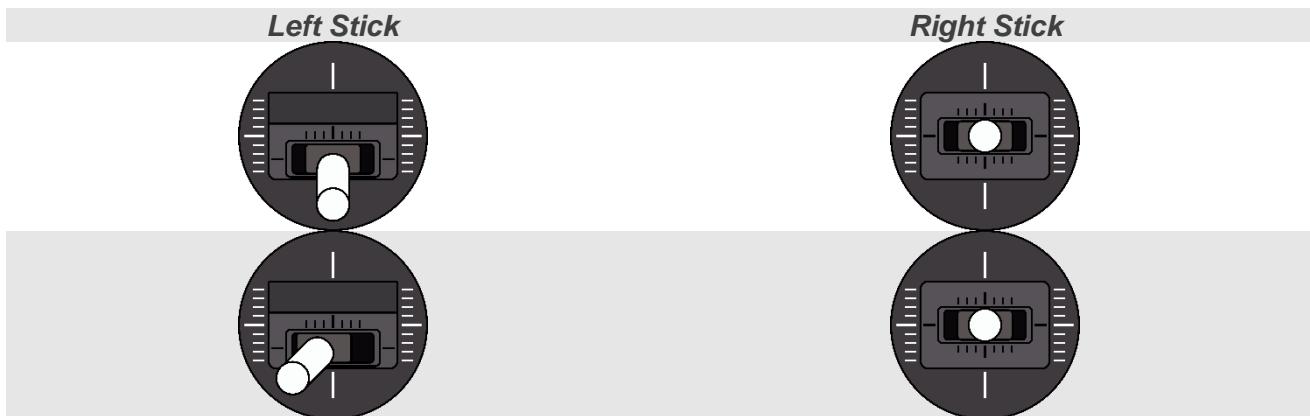
The Aurelia must be on the ground before starting the disarming procedure, failing to do so can cause the Aurelia to spin and crash.

The disarm command must be made considering the timing described in this subsection, otherwise the Aurelia flight controller will not identify it as a disarm command but as a movement command and the Aurelia could flip over.

Disarming means to disable the motors and stop them from spinning.

The steps to land and disarm the Aurelia must be performed in the following order:

1. Position the Aurelia over the area where you are going to land.
2. Use the Anemometer from the Flight Kit to check the wind speed before flight. **Avoid landing if the wind speed on the ground is higher than 5 m/s.**
3. Descend the Aurelia using the Throttle until it is at 5 meters.
4. Now descend carefully and slowly until the Aurelia is 2-3 inches above the ground.
5. Lower the Throttle all the way down and hold for 5 seconds.
6. Without lifting the Throttle move the Yaw to the left and hold it for another 5 seconds or until you hear a long beep and the motors stop spinning.



7. Until the motors stop spinning and the Aurelia's status is disarmed you can release the left stick.
8. Press the safety switch until it starts blinking, the motors should start beeping indicating that they are unable to spin.
9. In [section 21.5, page 112](#) you will find a Postflight Checklist which you can use after each flight, also within Aurelia Assist you can find a checklist ready to use, go to the following link to access it: <https://aurelia-assist.aurelia-aerospace.com/flight-checklist>

16.3 Auto Landing

The easiest way to Land is simply to switch to RTL mode. In this mode the Aurelia will return to the spot where it was armed. Descent until it touches the ground and then disarm the motors.

You can use the right stick to adjust the vehicle's position, but make sure you release the stick before the Aurelia touches the ground.

If you move the right stick while the Aurelia is in the ground, you could cause the Aurelia to flip over. Once the Aurelia touches the ground, move the throttle stick all the way down.

Be ready to regain manual control by changing the flight mode if the Aurelia's behavior is not the expected (the descent seems erratic) or if the landing zone is not clear. Make sure the throttle stick is in the middle before regaining manual control.

Once the motors are not spinning, press and hold the safety switch until it starts blinking.

17. Power Off



Make sure the Aurelia is disarmed and the safety switch is blinking.

1. Disconnect the battery(ies).
2. Power off the transmitter (Press and hold the power button).
3. Place the battery(ies) inside a LiPo safety bag.

18. Advanced

One of the most attractive features of the Aurelia is that it can be reconfigured using the Ground Station software; among the parameters you might want to change are the flight modes, failsafe configuration, battery monitor settings, transmitter calibration if you decide to use a different transmitter, and sensor calibration if you change or add new sensors.

You can also change some of the hardware like the ESCs and motors, if you have enough experience and feel confident to perform an upgrade, or if you have to replace a malfunctioning part.

Please be very careful when performing any of the actions described in this section.



Read and understand the [liability disclaimer](#) (page 114) before continuing.

18.1 Backing up/Restoring the factory parameters

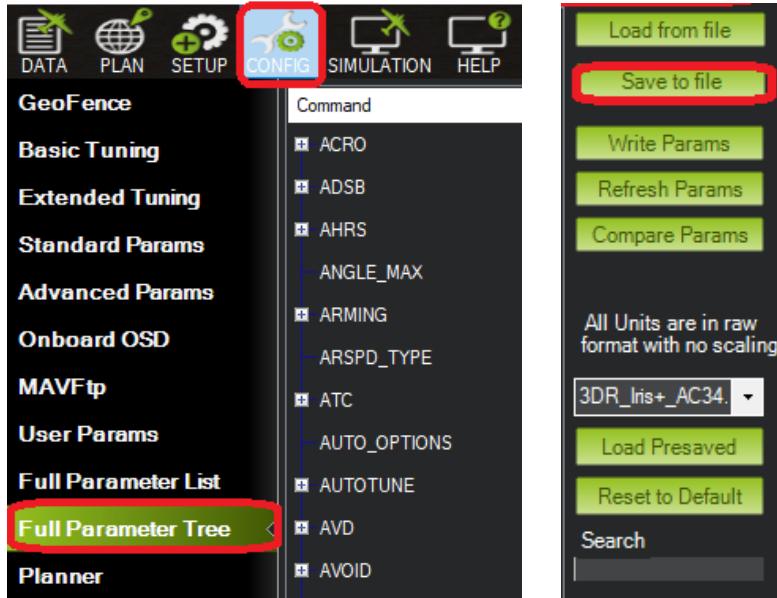
We recommend you save a copy of your Aurelia factory parameters, so you can always restore it to its default configuration.

18.1.1 Mission Planner

18.1.1.1 Save Parameters

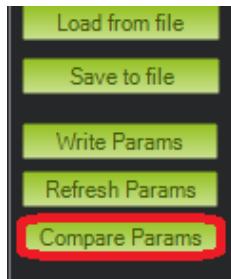
You can save the parameter file to your computer by doing the following:

1. Connect your Aurelia via USB to Mission Planner following the steps in [section 8.2.1, page 22](#).
2. Go to the tab **CONFIG, Full parameter Tree** and on the right side click on **Save to file**. Name the file and save it.



18.1.1.2 Load default parameters (Restore Params)

- 1 Connect your Aurelia via USB to Mission Planner following the steps in [section 8.2.1, page 22](#).
- 2 Go to the tab **CONFIG, Full parameter Tree** and on the right side click on **Compare params**.

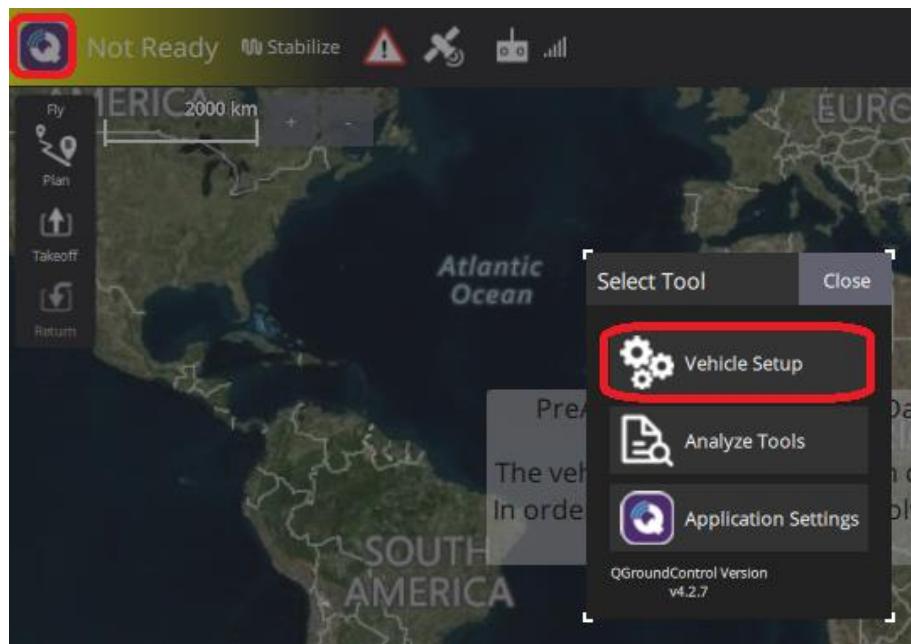


- 3 Select the file provided by our technical support team.
- 4 After opening the file, a window will appear with a comparison of the current and new parameters, leave all the boxes checked and press **Continue**.
- 5 Press **Write params** and restart the Aurelia in order to apply the changes.
- 6 After rebooting, go to the [Accelerometer and Compass Test](#) section of this guide and follow the steps described there (page 77).

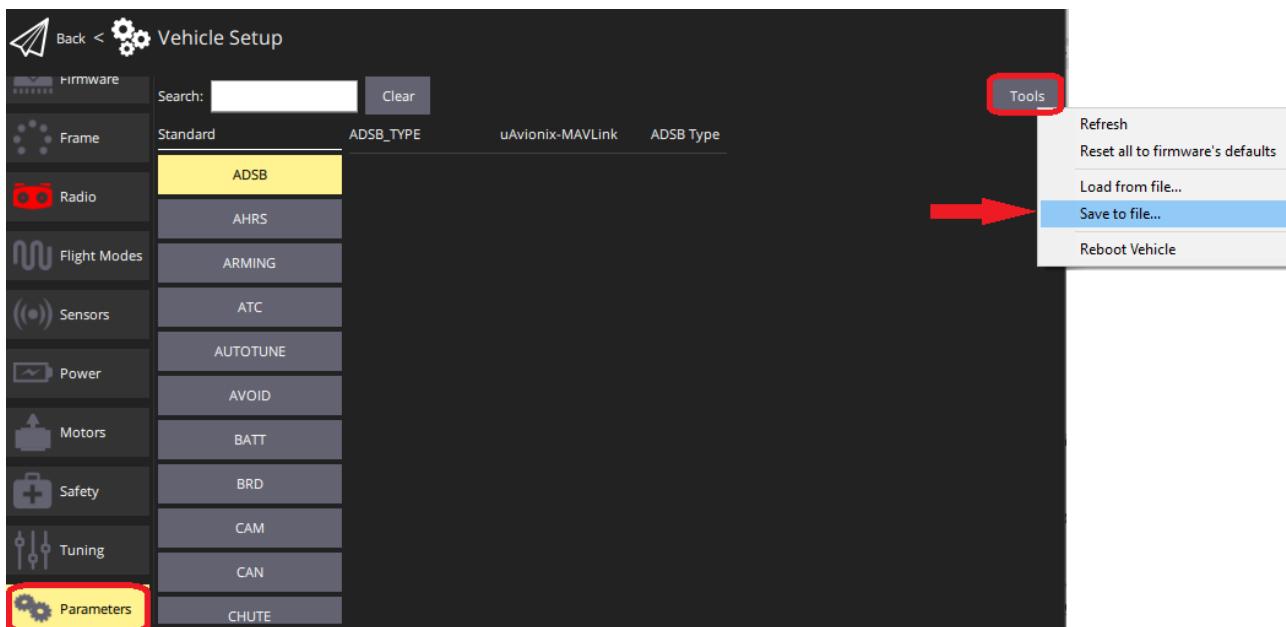
18.1.2 QGroundControl

18.1.2.1 Save Parameters

- 1 Connect your Aurelia via USB to QGroundControl following the steps in [section 8.2.2, page 27](#).
- 2 Make a click on the **Q icon** at the top left and select **Vehicle Setup**.

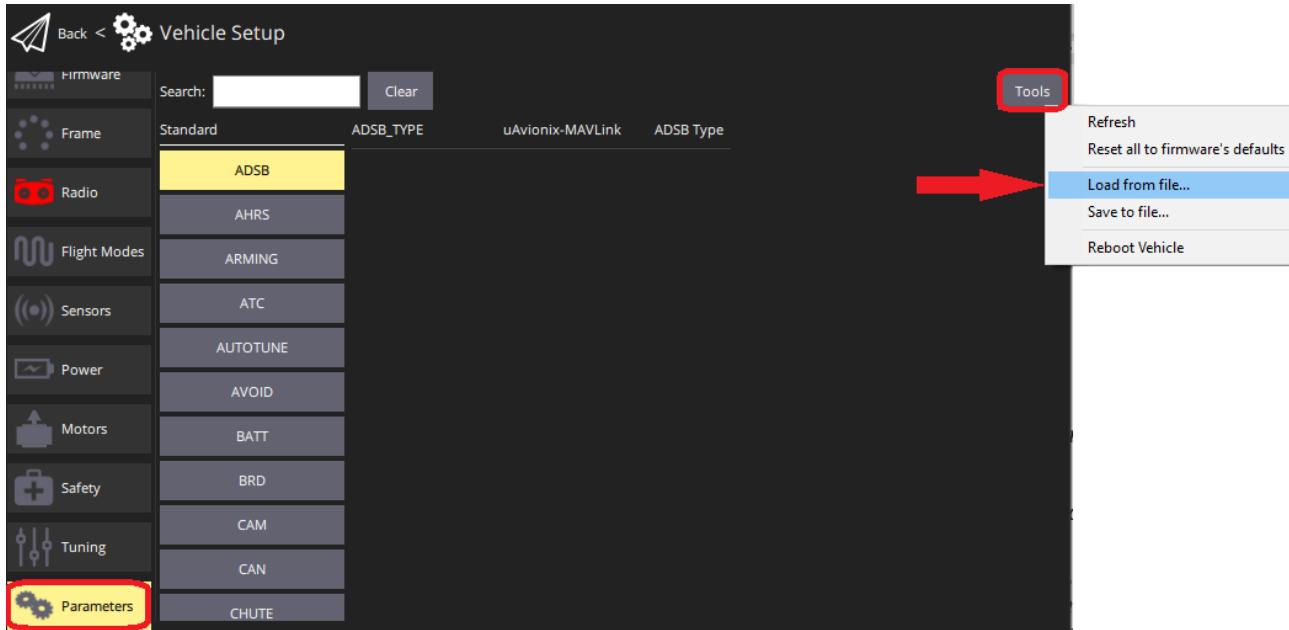


3. Scroll down in the left menu and click **Parameters**, then in the upper right corner click **Tools**, **Save to file**. Name the file and save it.

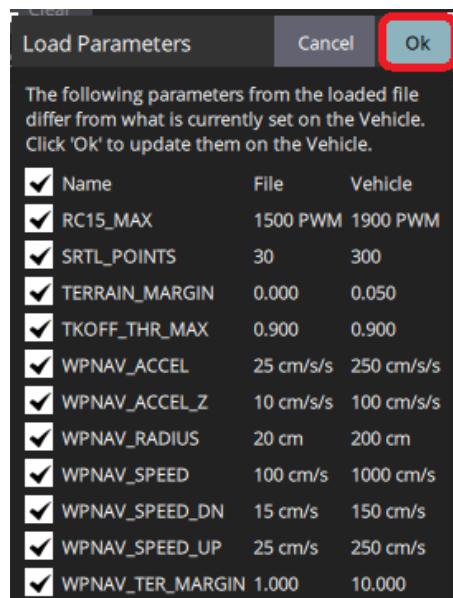


18.1.2.2 Load default parameters

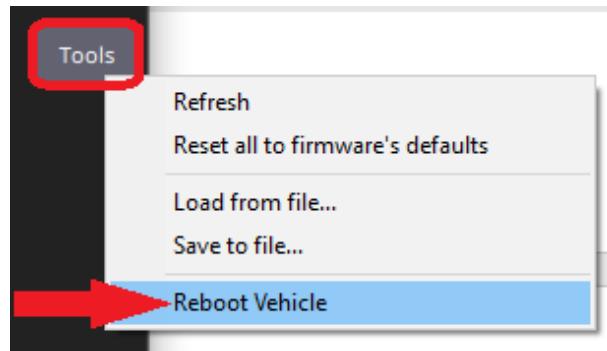
1. Connect your Aurelia via USB to QGroundControl following the steps in [section 8.2.2, page 27](#).
2. Make a click on the **Q icon** at the top left and select **Vehicle Setup**.
3. Scroll down in the left menu and click **Parameters**, then in the upper right corner click **Tools**, **Load from file**.



4. Select the file provided by our technical support team.
5. After opening the file, a window will appear with a comparison of the current and new parameters, leave all the boxes checked and press **Ok**.



6. Then click again on **Tools** and restart by selecting **Reboot Vehicle**.



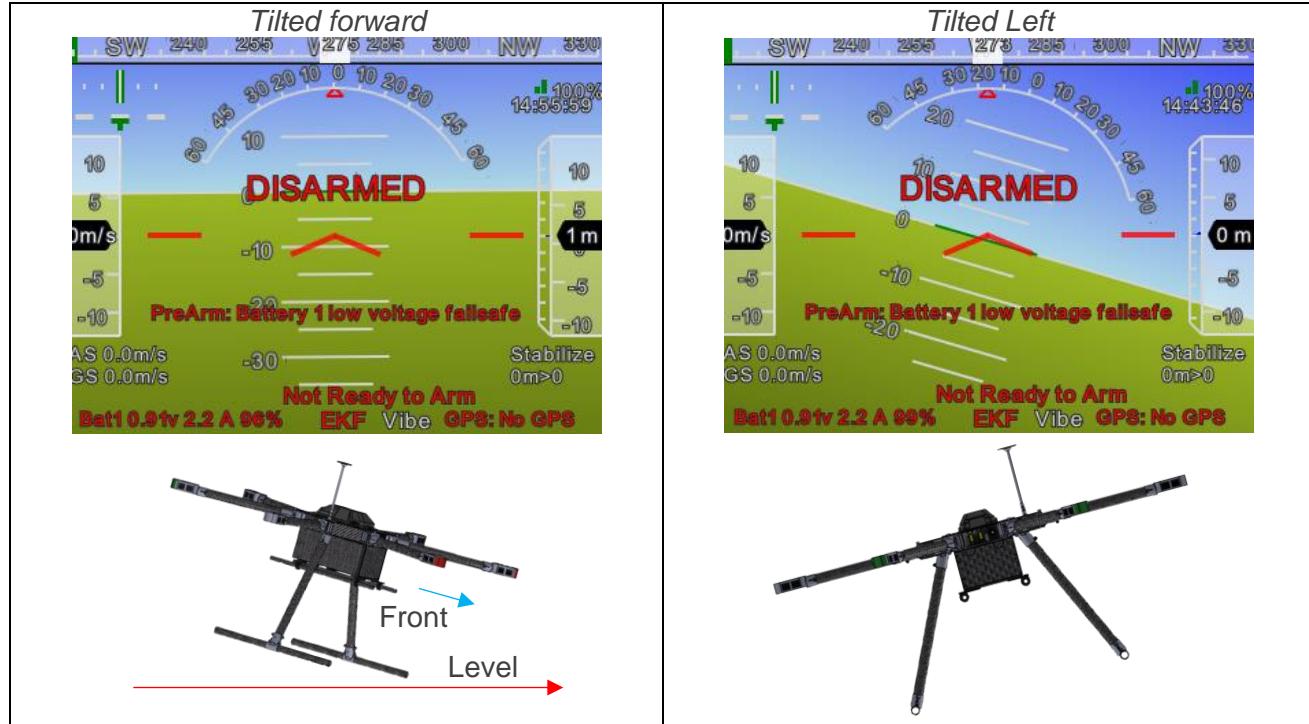
- After rebooting, go to the [Accelerometer and Compass Test](#) section of this guide and follow the steps described there (page 77).

18.1.3 Accelerometer and Compass test

- We will use the virtual horizon to check if the accelerometer is calibrated.
- Make sure that the position of the Aurelia matches the virtual horizon, remember the front of your Aurelia is where the logo is located. Also, your flight controller has an arrow which points to the front of the Aurelia.

In the following images, use the red lines and arrow of the virtual horizon as reference and consider that the Aurelia is facing you.





3. In case the drone positions do not match the virtual horizon, it will be necessary to recalibrate the accelerometer.

If you calibrated the accelerometer, it is necessary to recalibrate the compass.



Whether or not the accelerometer calibration has been performed, it is necessary to subsequently perform a compass calibration, to do so follow the corresponding steps in [section 8.4, page 37](#).

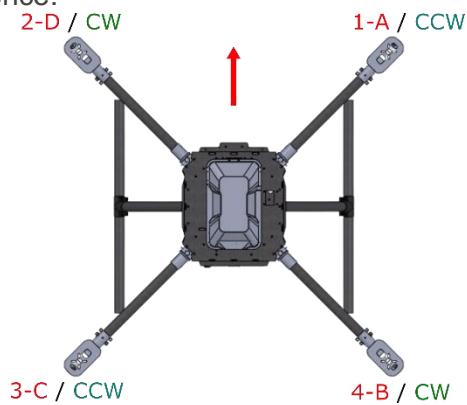
18.2 Replacing components

Always power off your Aurelia before replacing any of its components.

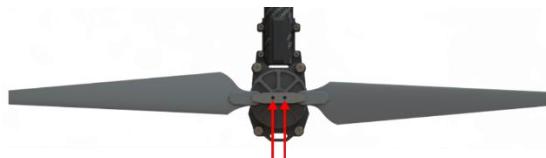
18.2.1 Propeller replacement

If you need to change a propeller do the following:

1. Identify the spin direction of the propeller. The arms in the Aurelia should have tags that indicate the spin direction (CW for clockwise, CCW for counterclockwise). You can use the following image for reference:



2. Use a 2.5mm hex wrench or the Screwdriver from the Flight Kit to remove the center screws of the propeller spinner.



3. Place the new propeller in the same position as the old one and place the Inclinometer from the Flight Kit on the propeller base to make sure it is level.
4. Use the same 2.5mm hex wrench or the T-Handle Torque screwdriver of 16 lb/in to tighten the screws securely. **If the screws are not securely tightened the propeller might get loose during flight.**

18.2.2 Motor Replacement

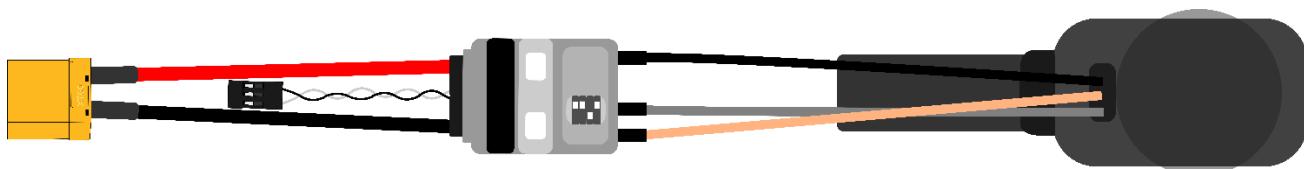
You need electronic soldering skills to replace a motor, if you don't feel confident about this, we recommend replacing the entire arm.



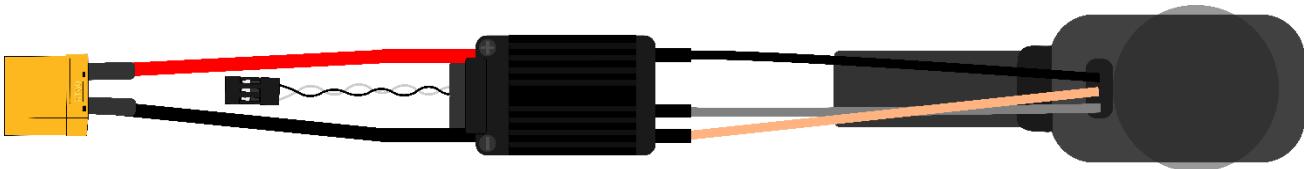
If you don't cross-soldered the wires of the ESC that are closer, the motor will do the opposite you programmed.

The following diagram represents the connection between the motor and the ESC according to the Aurelia model you own.

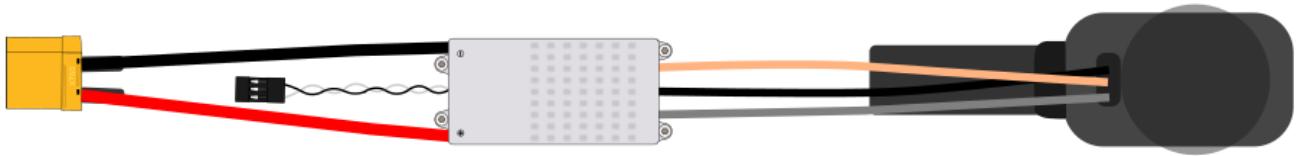
- Standard versions:



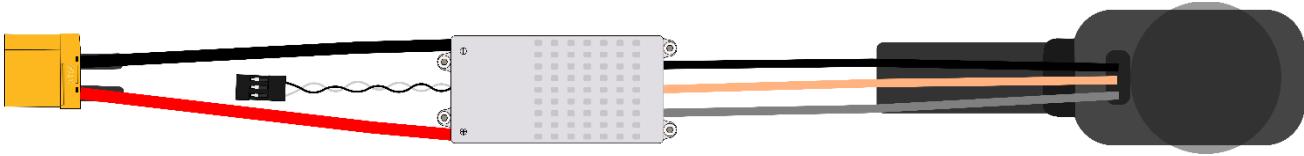
- X6 Pro and X6 MAX:



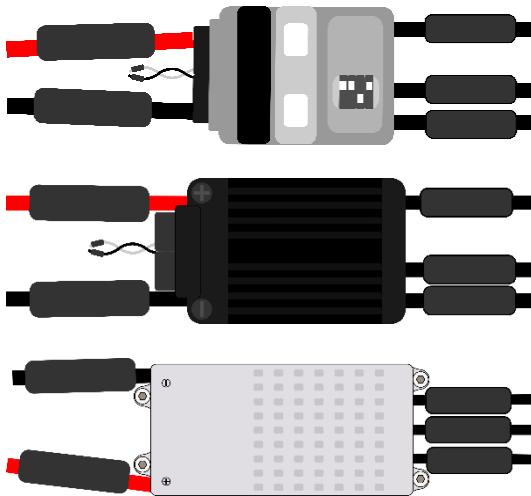
- X8 MAX Clockwise:



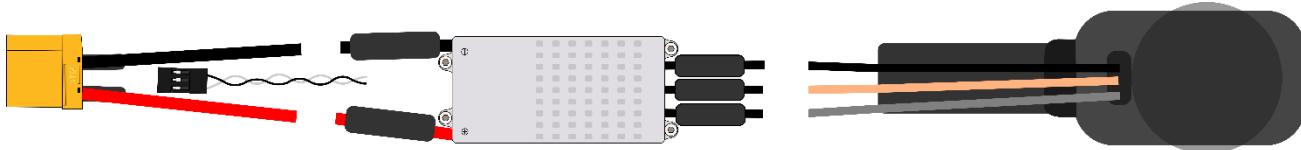
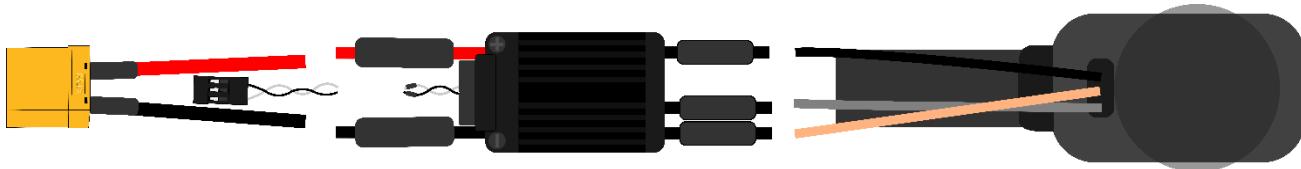
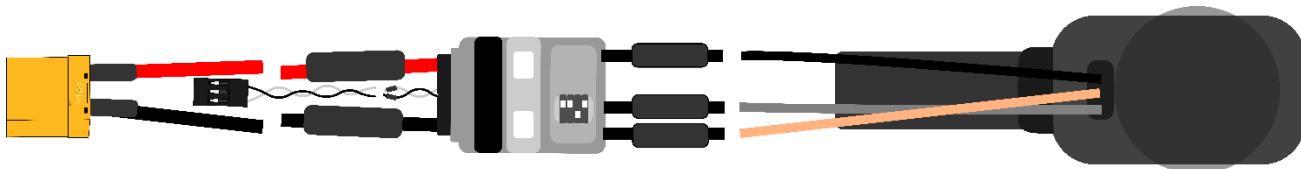
- X8 MAX Counter Clockwise:



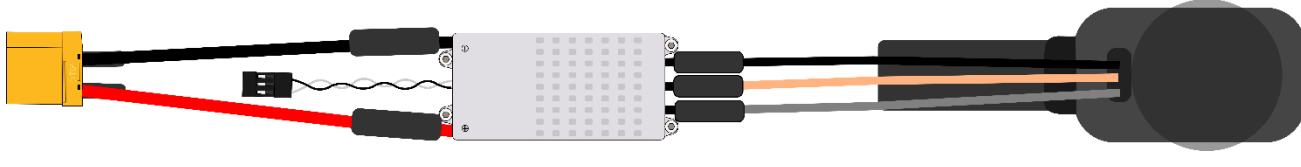
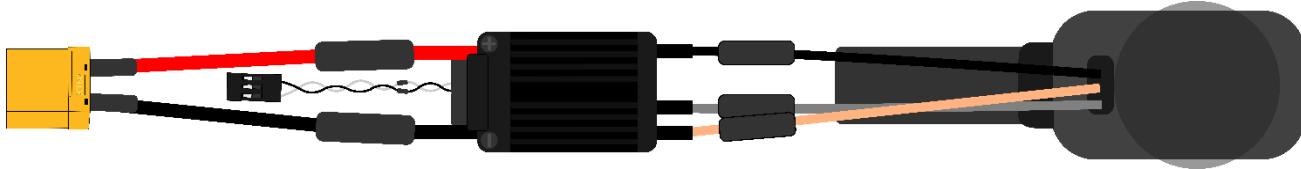
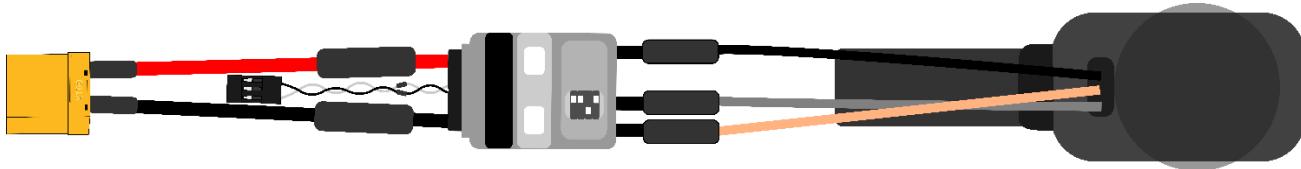
1. Remove the propellers from the motors, make sure you identify the spin direction of each.
2. Identify the order of the three cables connecting the ESC and the motor.
3. Trim the three cables connecting the ESC to the motor.
4. Prepare the cables with heat shrink for isolation.



5. Unscrew the motor from the motor base, you must remove the ESC cover by removing the screws.
6. Install the new motor by applying a thread locker (such as Loctite) to the screws and tighten them with a torque wrench to 16 in/lb.
7. Solder the motor to the ESC with the same phase order as the previous motor.



8. Place the heat shrink tubes around the solder and apply heat to them in order to shrink them.



9. Test the spin direction ([page 86](#)).

18.2.3 ESC replacement

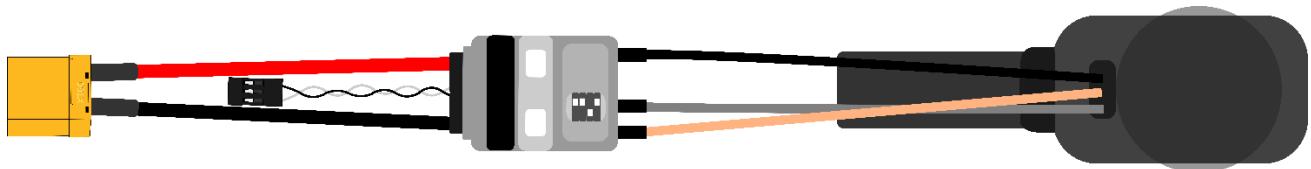


You need electronic soldering skills to replace an ESC, if you don't feel confident about this, we recommend replacing the entire arm.

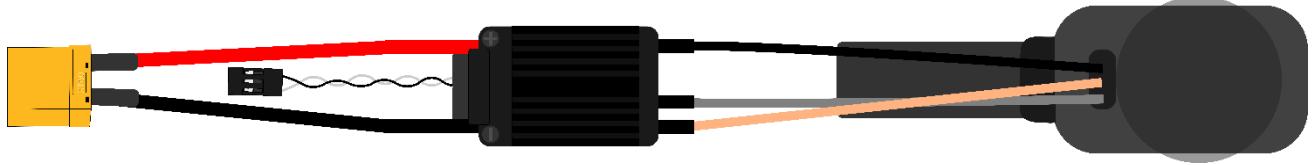
If you don't cross-soldered the wires of the ESC that are closer, the ESC will do the opposite you programmed.

The following diagram represents the connection between the motor and the ESC according to the Aurelia model you own.

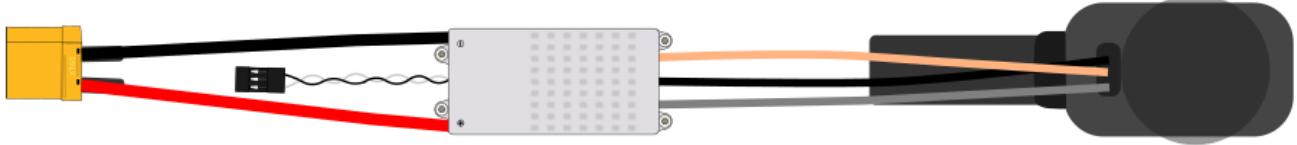
- Standard versions:



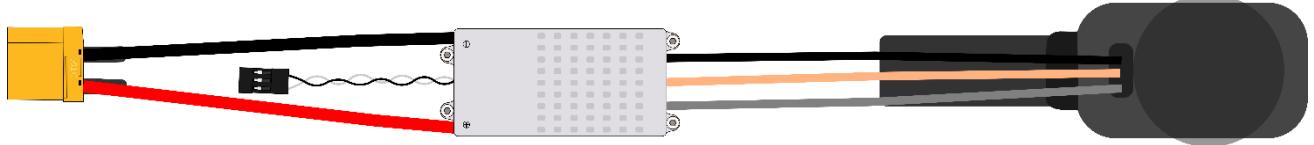
- X6 Pro and X6 MAX:



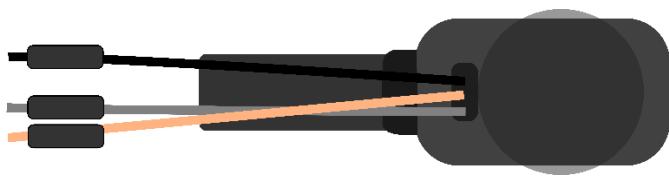
- X8 MAX Clockwise:



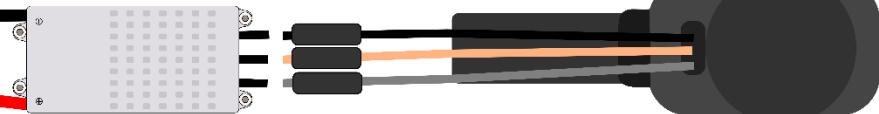
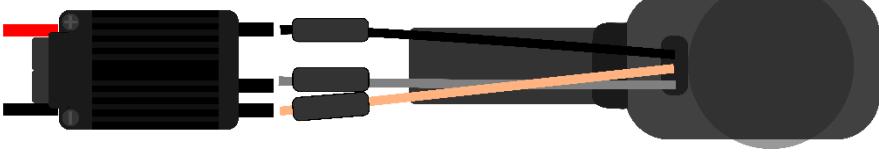
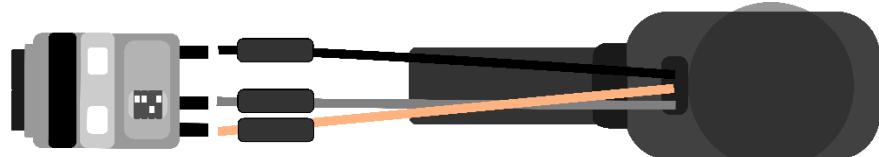
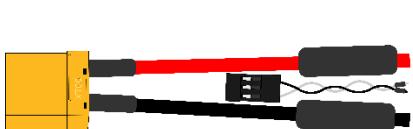
- X8 MAX Counter Clockwise:



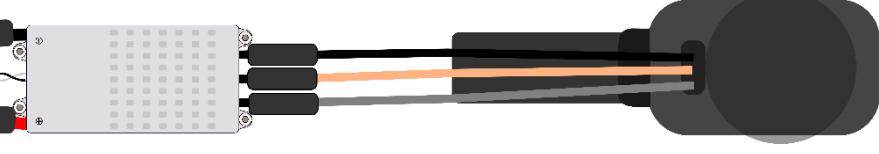
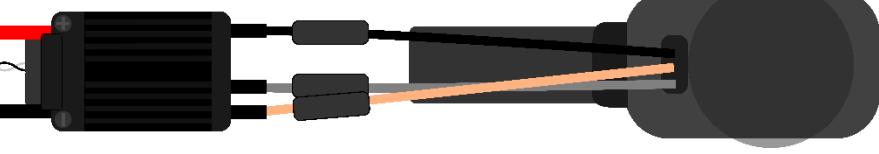
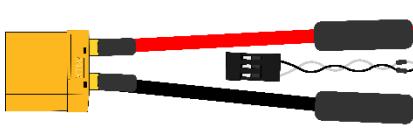
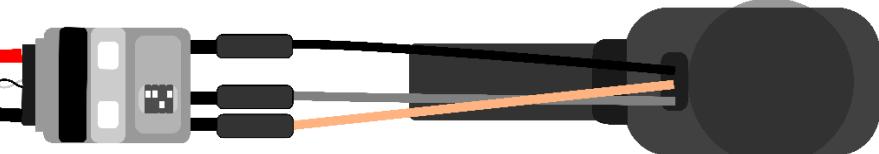
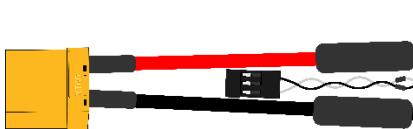
1. Remove the propellers from the motors, make sure you identify the spin direction of each.
2. Identify the order of the three cables connecting the ESC and the motor for the model you have.
3. Trim all five cables as close as the ESC as possible so you have more space to do the soldering.
4. Prepare the cables with heat shrink tubes for isolation.



5. Solder the new ESC, remember to follow the previous phase order. Trim the cables of the new ESC to 3cm so they can fit into the motor base.

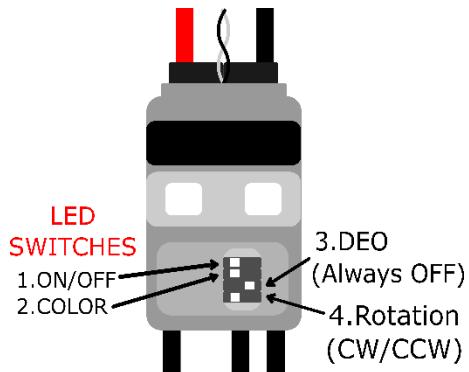


6. Place the heat shrink tubes around the solder and apply heat to them in order to shrink them.



7. In case of the standard Aurelia models, it is necessary to program the direction of rotation and color of the LED depending on the arm to be configured, use the following table as reference:

Aurelia Model	Red LED	Green LED
X4	M1, M2	M3, M4
X6	M1, M2	M3, M4, M5, M6
X8	M1, M2, M3, M8	M4, M5, M6, M7



8. In case of the Aurelia X6 Pro V1/V2 and X6 MAX models, the ESC will be already programmed with the corresponding direction of rotation, so when purchasing the spare part it is necessary to specify for which arm it is needed, so the Aurelia Aerospace team can prepare the ESC.
9. In case of the Aurelia X8 MAX model, the direction of rotation is determined by the order in which the ESC cables are soldered to the motor, use the reference image at the beginning of this section (page 80).
10. Proceed to perform the ESC calibration and test the spin direction, [section 18.2.4, page 85](#).

18.2.4 ESC Calibration

The ESC calibration is highly recommended to be performed using Mission Planner.

1. Remove the propellers from all of the motors.
2. Power on your transmitter. (for Radiomaster if any warnings appear, press the selection knob to ignore them).
3. Raise the left stick all the way up and hold it there.
4. Connect a battery to your Aurelia and connect wirelessly to Mission Planner following the steps from [section 8.2.1, page 22](#).
5. Press **Ctrl+F** on your keyboard and a window with multiple options will appear.
6. Click the option **reboot pixhawk**, then select **Yes**.



7. Click on **CONNECT** again.
8. Press the safety switch, you will hear the arming tone, and two beeps coming from the motors.
9. Right after the two beeps, move the throttle stick all the way down, **this movement should be done quickly right after hearing the two beeps coming from the motors**.

10. You should hear one long beep, meaning that the ESC has learned the max and min throttle positions.



The motors are able to spin now!

11. Slowly raise the throttle and make sure that all the motors spin at the same speed and in the desired direction.
12. Lower the throttle stick all the way down.
13. Power off your Aurelia.
14. Power off your transmitter.

18.2.5 Spin direction test

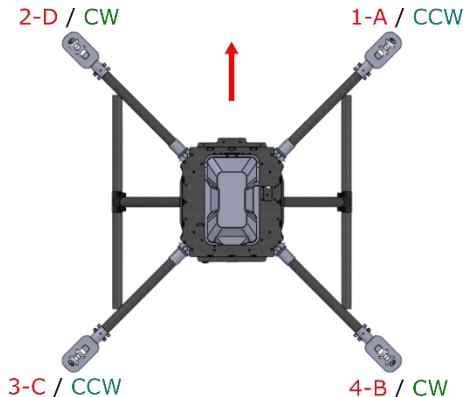
The motor test is highly recommended to be performed using Mission Planner, as it allows us to control the throttle level and the duration of the turn.

1. Power on your Aurelia following the [Power on](#) procedure (page 70). **You must have removed all the propellers by now.**

2. Connect the Aurelia to Mission Planner, [section 8.2.1 page 22](#).
3. Go to **SETUP, Optional Hardware, Motor test**.
4. Set the throttle according to the model of Aurelia you have and the duration to 2sec:

Aurelia	Throttle
X4 Standard, X6 Standard, X6 MAX, X6 Pro V1/V2, X8 Standard	9%
X8 MAX, X8 Pro	11%

5. Identify the motor you want to test and click on Test Motor ____.



6. If the motor is spinning in the desired direction, stop here and power off your Aurelia. If you replaced the ESC proceed to the [ESC calibration section](#) (page 85).
7. If the motor is not spinning in the desired direction, you must power off your Aurelia and check the diagram that represents the connection between the motor and the ESC ([page 80](#)).
8. Repeat from step 1.

18.3 New Battery Setup

You can try different battery setups in order to improve the Aurelia performance while carrying different payloads. Before acquiring new batteries for your Aurelia, make sure you understand the following.

- **Know your electric concepts.** Basic electricity notions (voltage, current, resistance, circuit, etc.) are required in order to make an effective LiPo batteries setup.

Read the following sentence: *LiPo batteries are **connected in parallel** in order to increase the total capacity (mAh), if **connected in series**, the battery capacity will remain the same while the voltage will increase.*

If the last sentence is not totally clear to you, don't try to change the battery setup.

- **6S batteries only, same model.** The Aurelia has a Mauch BEC optimized for 6S batteries which provides power to the flight controller; it also has a battery voltage failsafe configuration for a 6S setup. The Aurelia will fail if any other type of battery is plugged.
- **C rating.** Choose the C rating of your batteries so the whole setup can provide 200 A. Ask an expert if you don't fully understand what the C rating means.
- **Cables and plugs.** Use the correct cables and plugs for your new power harness, if you don't know how to select the cable and plug ampacity, ask an expert. Don't try to fabricate your own power harness if you don't have experience in electronics and multicopter builds.

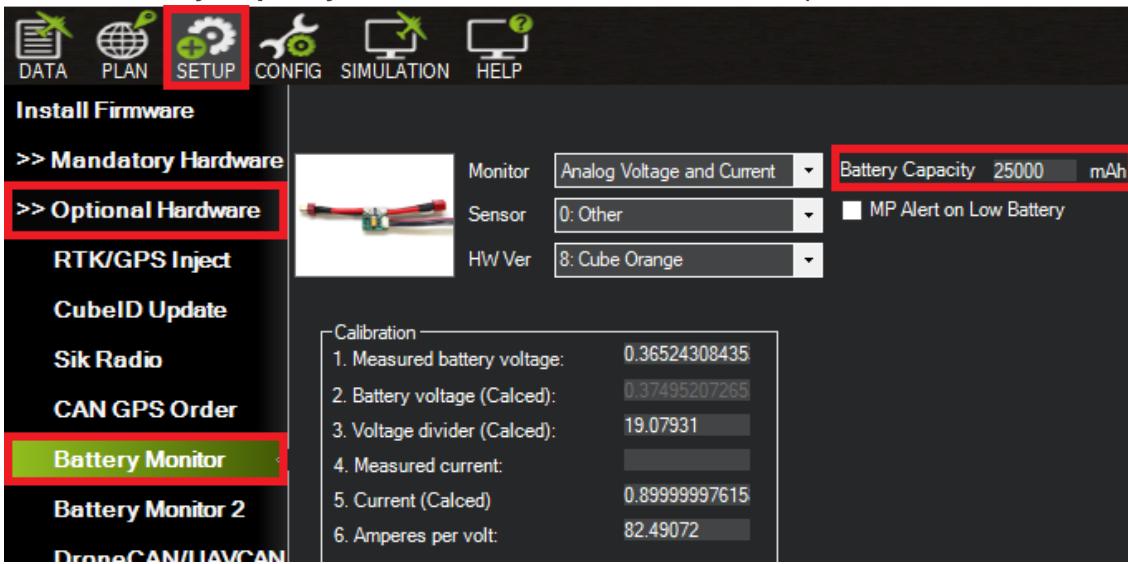
Higher capacity doesn't mean longer flight time. To put it simple, adding extra batteries to increase capacity will also add extra weight and decrease overall efficiency. Don't rush into buying the bigger and heavier batteries.

18.3.1 Mandatory Configuration

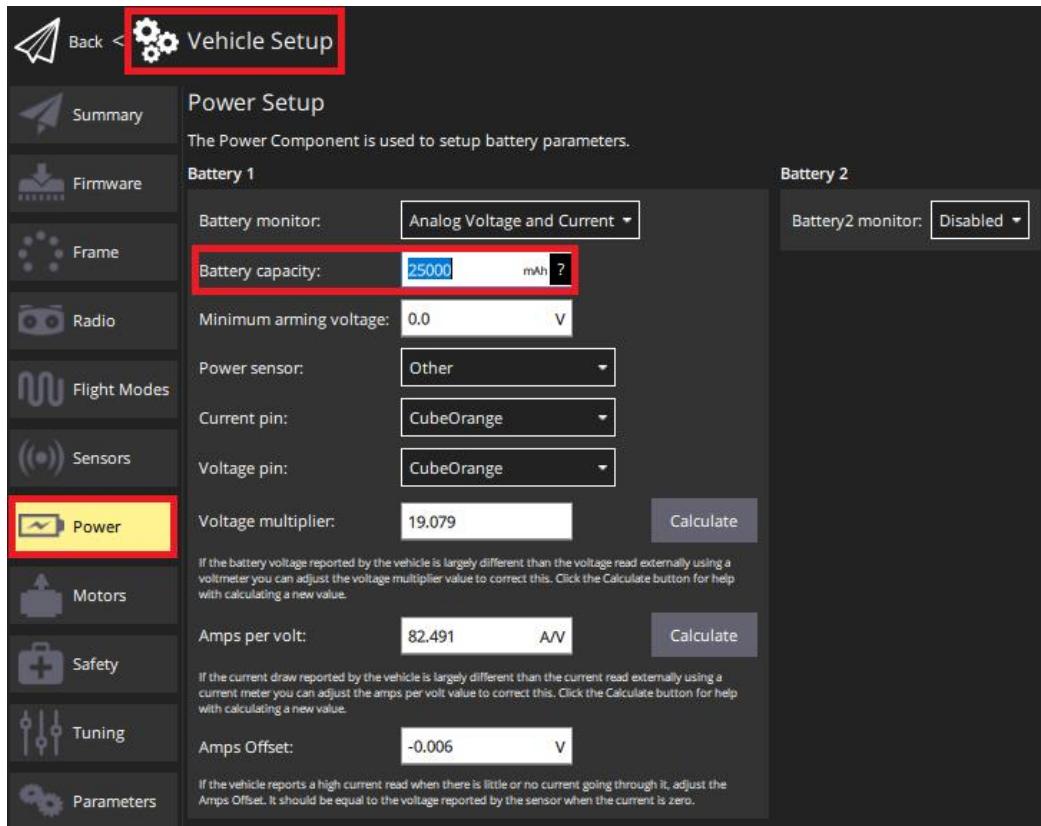


Failing to perform this configuration will likely end up in a crash, make sure you follow all the steps.

1. **Total capacity (mAh).** Add the capacity off the battery you are going to connect at once, for example, if you're using two 10 000 mAh battery, the total capacity will be 20 000 mAh.
2. **Connect to the Ground Station.** Connect your Aurelia to the computer with the USB cable following the steps in [section 8.2, page 22](#).
3. **Replace capacity value.**
 - a. In Mission Planner, go to **SETUP, Optional Hardware, Battery Monitor**. Change the **Battery Capacity** value with the one calculated in step 1.



- b. In QGroundControl, click on the **Q** icon and go to **Vehicle Setup, Power**. Change the **Battery Capacity** value with the calculated in step 1.



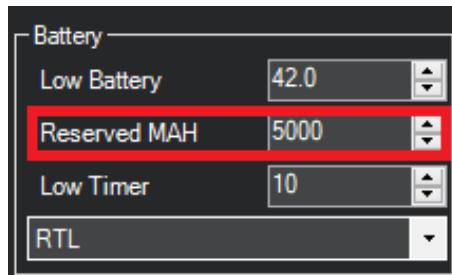
4. **Safe battery low limit.** Your battery setup must never discharge below a safe limit, usually between 20% and 25% of the total capacity. Multiply the total capacity times the percentage and divide by 100.

For example, with a 20 000 mAh of total capacity and a 22% of reserved capacity.

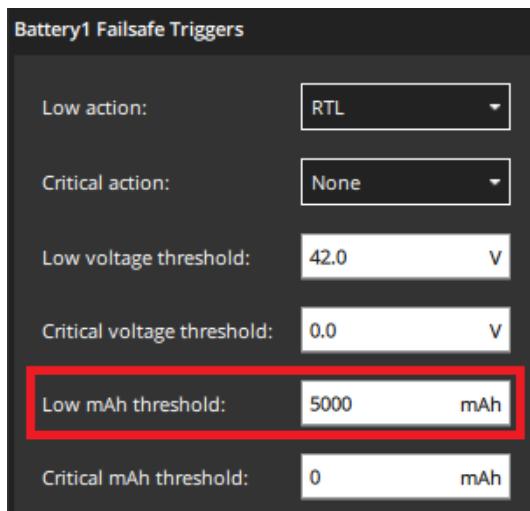
$$20000 \text{ mAh} \times \frac{22}{100} = 4400 \text{ mAh}$$

5. **Replace the Reserved mAh value.**

- a. In Mission Planner, go to **SETUP, Mandatory Hardware, Failsafe**. In the Battery box, change the **Reserved MAH** value with the one calculated in step 4.



- b. In QGroundControl, click on the **Q** icon and go to **Vehicle Setup, Safety**. In the **Battery1 Failsafe Triggers** box, change the **Low mAh threshold** value with the calculated in step 4.



6. **Disconnect.** Disconnect from the ground station and power off your Aurelia.
7. **Verify.** Connect the Aurelia to the ground station and verify that the values were successfully changed. If they were not, repeat the steps.



Double check your calculations, if the numbers are not correct, it might end up in a crash.

18.4 Firmware Upgrade

If you want to upgrade your flight controller firmware to add the newest Ardupilot features, do the following:



It is necessary to make a backup of the factory settings of your drone before updating the firmware ([page 74](#)).

18.4.1 Regular Upgrade

18.4.1.1 Mission Planner

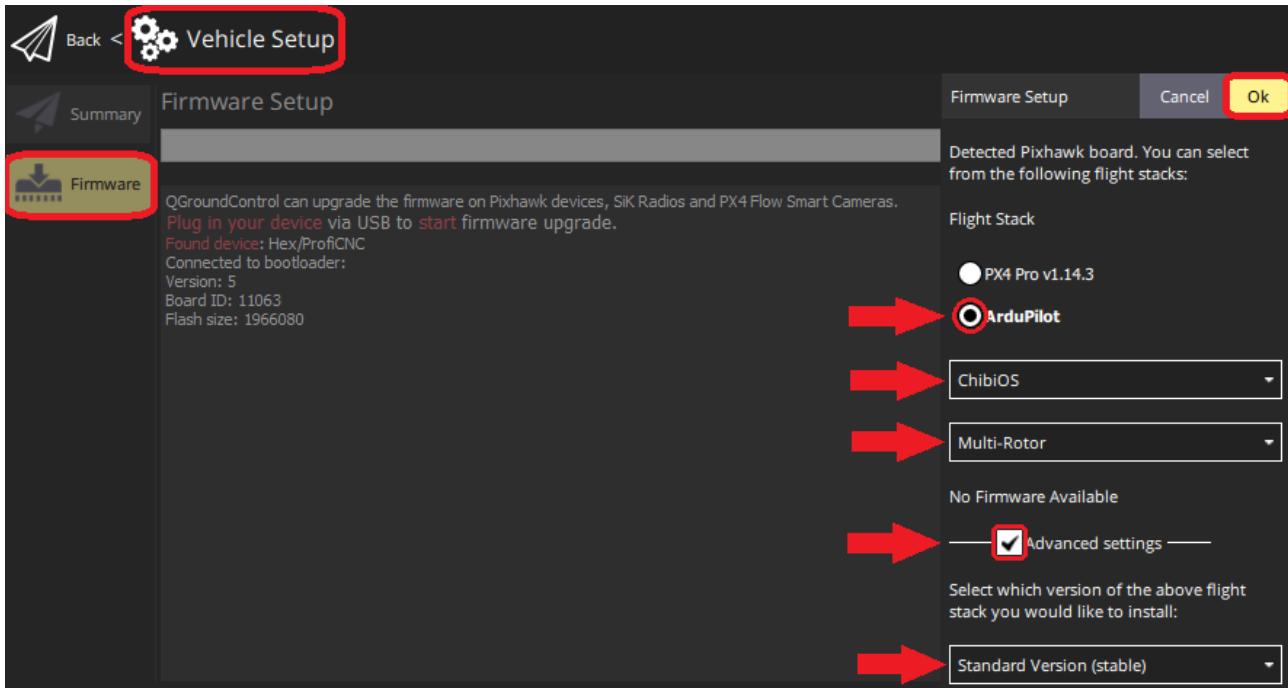
1. Connect your Aurelia to a computer using the USB cable.
2. Open Mission Planner and select the right COM port and a baud rate of 115200, **but don't click on CONNECT**.
3. Go to **SETUP, Install Firmware**.
4. Click on the drawing of **quadcopter**, **hexacopter** or **octocopter**, depending on the platform you have.
5. When asks if you are sure of the version prompted, click **Yes**.



6. If it prompts you to unplug the board, press **OK** and then plug it back in.
7. When the update is finished and you hear the start-up tones, connect to Mission Planner and check the parameters, servo outputs and failsafe settings to make sure nothing has been overwritten.

18.4.1.2 QGroundControl

1. Open QGroundControl in your computer and make a click on the **Q icon** at the top left.
2. Click on the **Vehicle Setup** and go to **Firmware**.
3. Connect the Aurelia to the computer and a section will open on the right part of the screen, make sure that the settings are configured as shown in the picture.



4. When finished, at the top left press **Ok**.
5. When the update is finished and you hear the start-up tones, connect to QGroundControl and check the parameters, servo outputs and failsafe settings to make sure nothing has been overwritten.

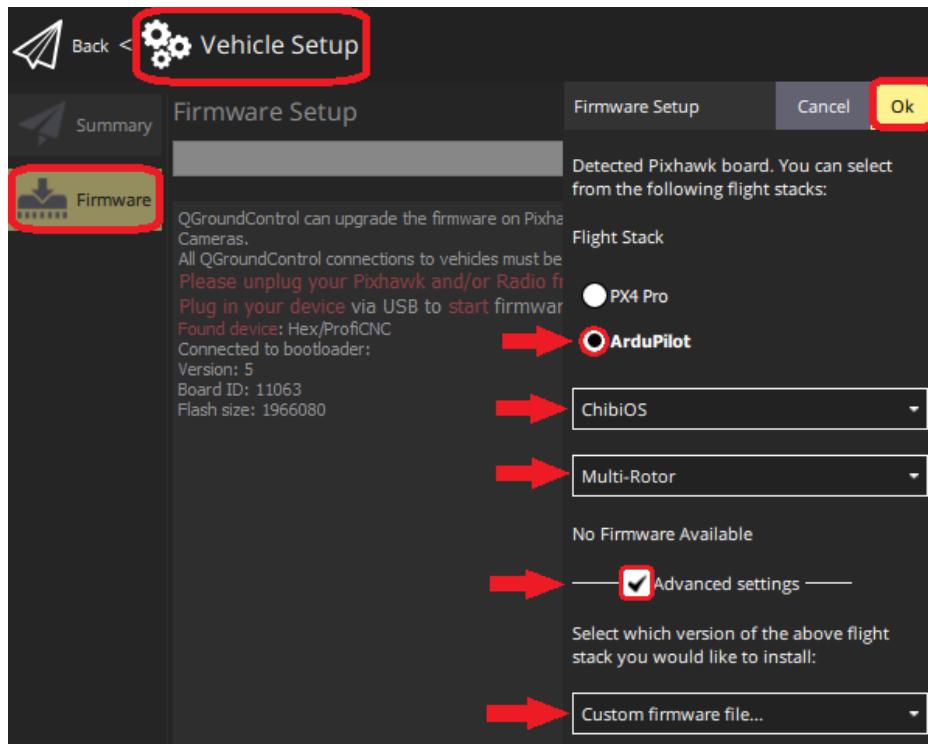
18.4.2 ODID Upgrade

18.4.2.1 Mission Planner

1. Follow the steps from 1-4 of the [section 18.4.1.1, page 90](#), but instead of select the drawing of one of the frames, click on **Load custom firmware** under the octocopter symbol.
2. The file explorer will open and you will have to select the file provided by our technical support team and click on **Open**.
3. If it prompts you to unplug the board, press **OK** and then plug it back in.
4. When the update is finished and you hear the start-up tones, connect to Mission Planner and check the parameters, servo outputs and failsafe settings to make sure nothing has been overwritten.

18.4.2.2 QGroundControl

1. Open QGroundControl in your computer and make a click on the **Q icon** at the top left.
2. Click on the **Vehicle Setup** and go to **Firmware**.
3. Connect the Aurelia to the computer and a section will open on the right part of the screen, make sure that the settings are configured as shown in the picture.



4. When finished, at the top left press **Ok**.
5. The file explorer will open and you will have to select the file provided by our technical support team and click on **Open**.
6. If it prompts you to unplug the board, press **OK** and then plug it back in.
7. When the update is finished and you hear the start-up tones, connect to QGroundControl and check the parameters, servo outputs and failsafe settings to make sure nothing has been overwritten.

19. Retrieving Flight Logs

When the Aurelia doesn't fly as expected or there is a problem with the Aurelia, it is necessary to request technical support and provide flight logs as well as images and videos of the undesired behavior/problem.

When flying your Aurelia, we recommend you to use Meta Glasses to record your flights, so in case you require technical assistance you will be able to share with our Technical Support team the flight evidence along with the flight logs for analysis.

19.1 Micro SD Card

The flight controller has on the left side below the micro-USB port a micro-SD card on which the flight logs are stored. To remove it, it is necessary to press lightly with the fingernail or a small object and release, the card will be ejected so it can be taken with the fingers.

Use a converter to connect the micro-SD card to a computer and transfer all the files to a zip folder.

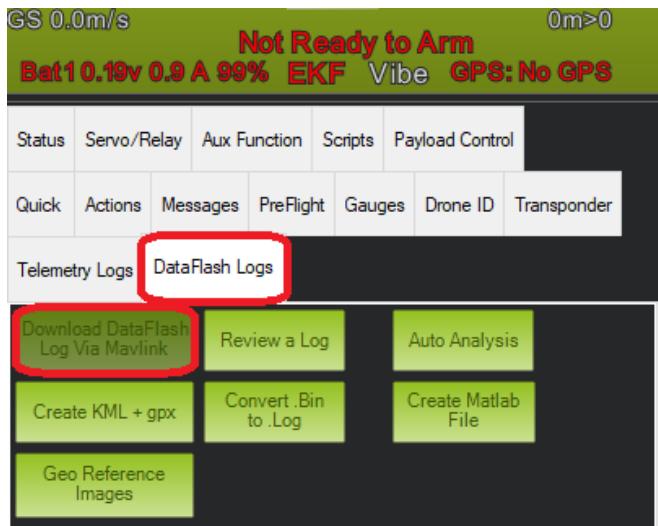


It is not recommended to delete the logs from the card so that record will always be available.

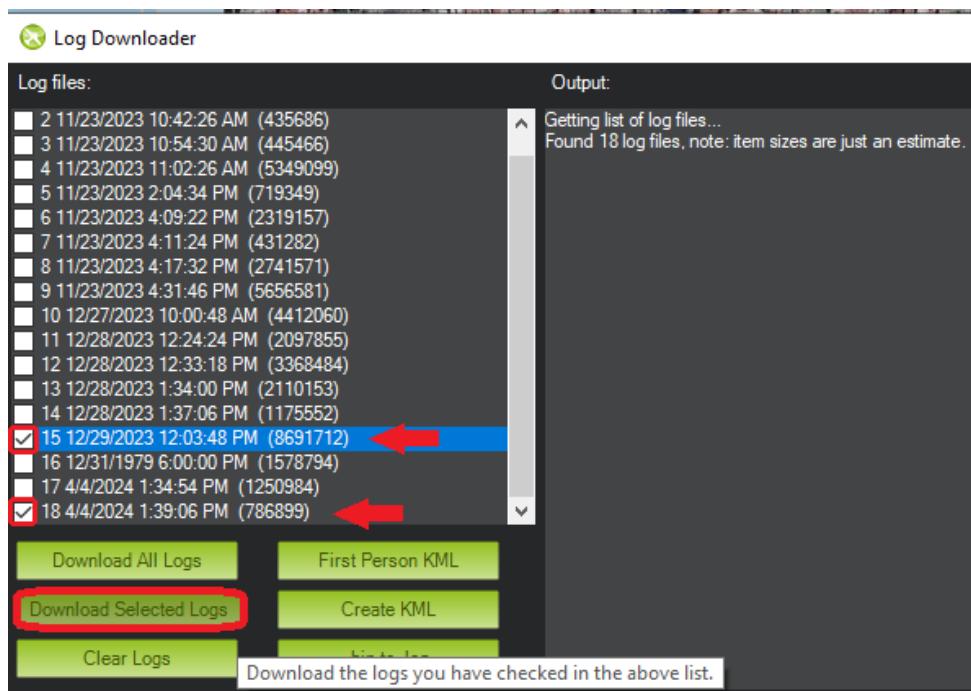
The SD card must be reinserted into the flight controller before turning on the drone in order to continue logging future flights.

19.2 Using Mission Planner

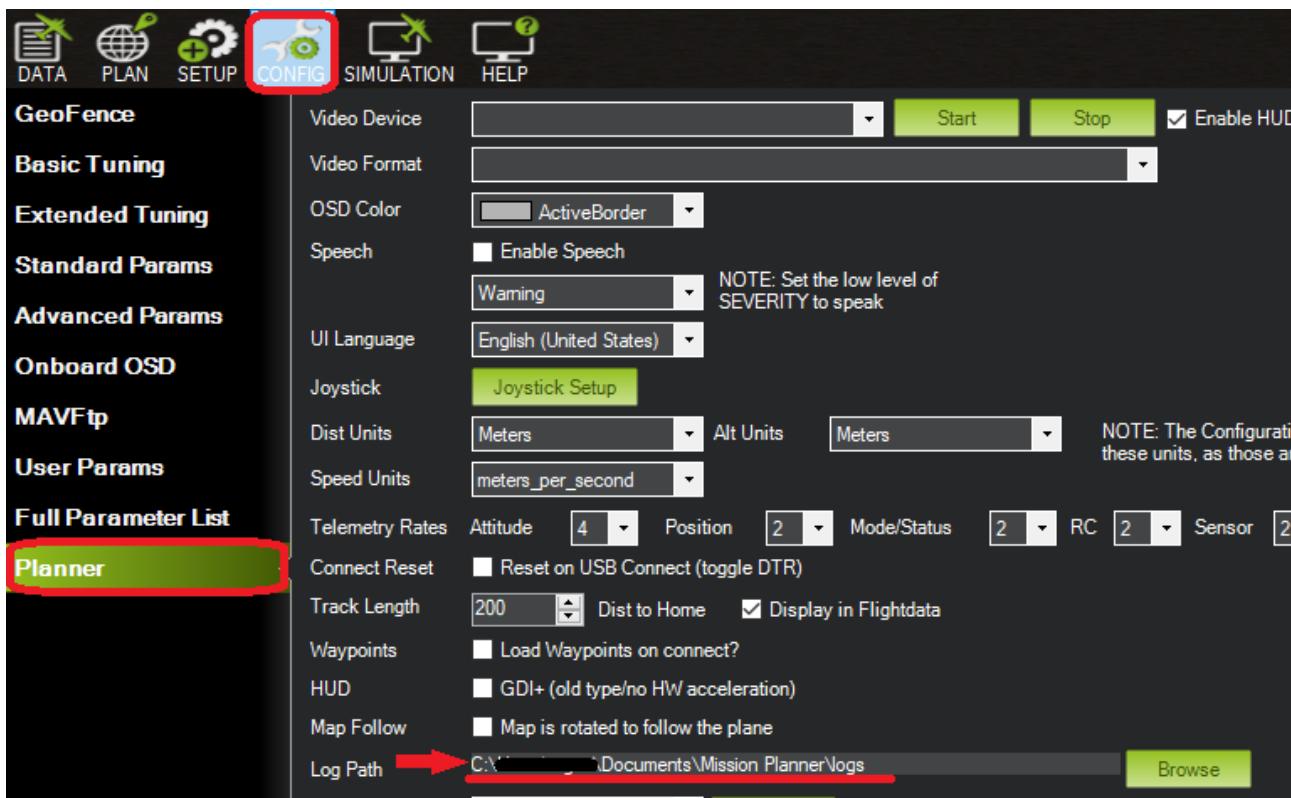
1. Connect the Aurelia to a computer via USB following the steps of [section 8.2.1, page 22](#).
2. When Mission Planner finishes downloading the parameters, go under the virtual horizon and open the tab **DataFlash Logs** and select **Download DataFlash Log Via MavLink**.



3. In the left part of the new screen, mark the checkboxes of the flight logs you need to download, they can be identified because the name contains the date and time of the flight.
4. Once you have chosen the desired logs, press **Download Selected Logs**.
It is important to leave the Aurelia connected and do not move it during this process.

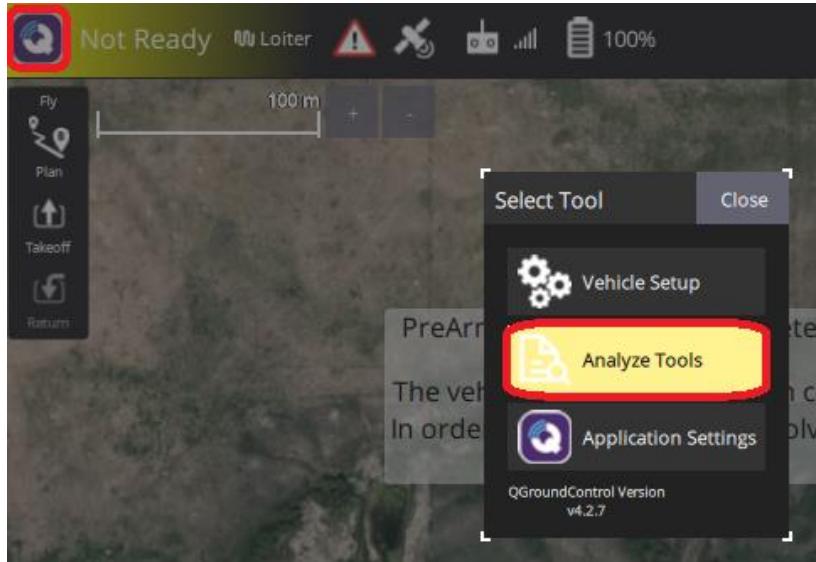


- To know where the flight logs are stored, inside Mission Planner go to **CONFIG**, **Advanced** and you will find the **Log Path**. Inside the final folder it will be divided into subfolders called QUADROTOR, HEXAROTOR and OCTOROTOR, look for your logs inside the folder corresponding to the model you own, inside is another folder called 1, where the downloaded logs will be stored.

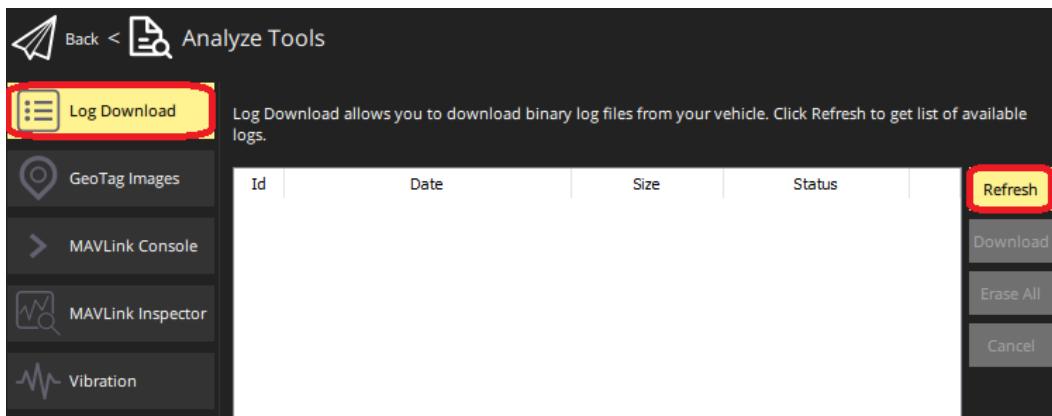


19.3 Using QGroundControl

1. Connect the Aurelia to a computer via USB following the steps of [section 8.2.12, page 27](#).
2. When QGroundControl finishes downloading the parameters, click on the **Q icon** and open **Analyze Tools**.



3. Inside the tools go to **Log Download** and click on **Refresh**, this will get the list of available logs.



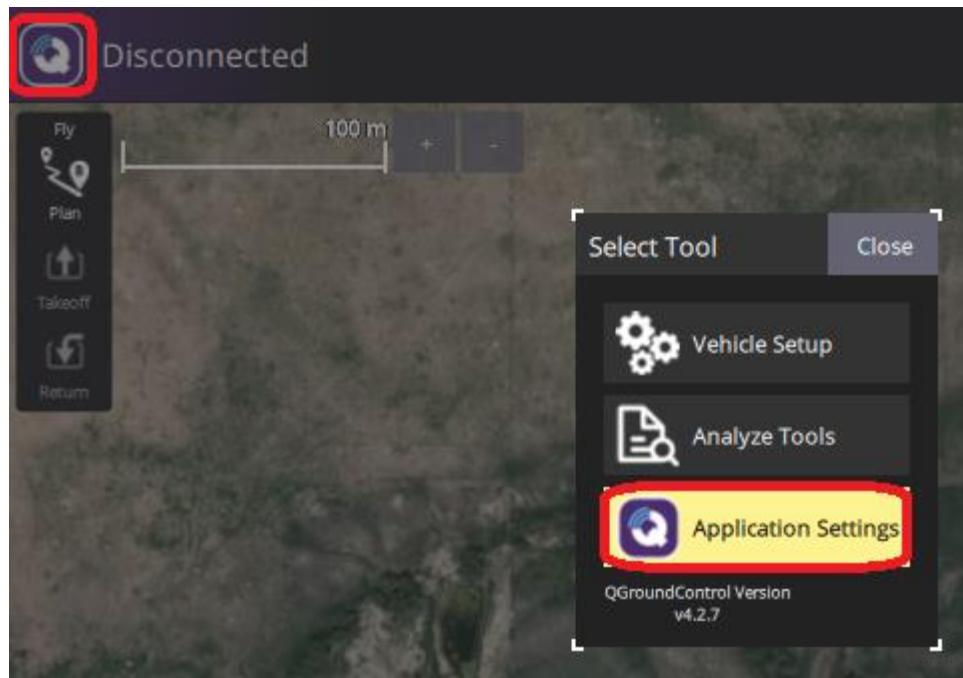
4. Make one click on top of the flight logs you want to download, when finish selecting them press **Download**.

It is important to leave the Aurelia connected and do not move it during this process.
 When saving, you will be prompted to choose or create a new folder where to store them.

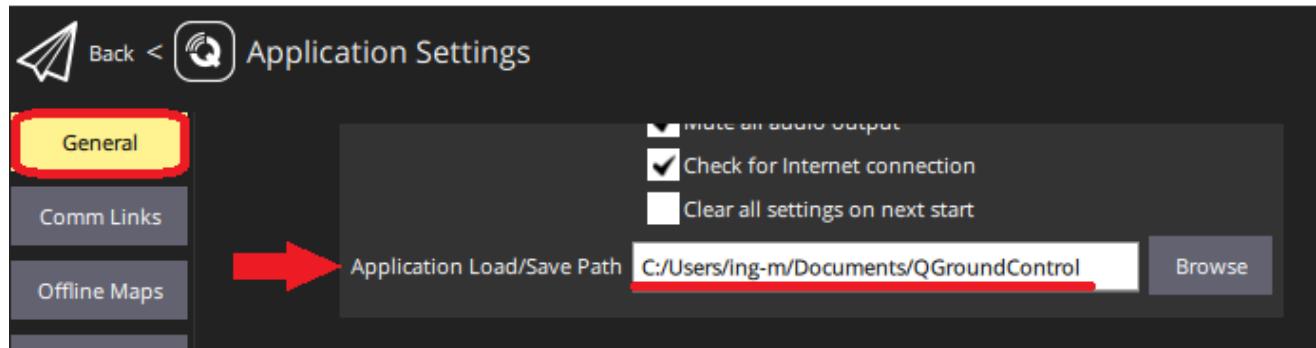
Log Download allows you to download binary log files from your vehicle. Click Refresh to get list of available logs.

ID	Date	Size	Status
1	Thursday, November 23, 2023 10:42:26 AM	425.5kB	Available
2	Thursday, November 23, 2023 10:54:30 AM	435.0kB	Available
3	Thursday, November 23, 2023 11:02:26 AM	5.1MB	Available
4	Thursday, November 23, 2023 2:04:34 PM	702.5kB	Available
5	Thursday, November 23, 2023 4:09:22 PM	2.2MB	Available
6	Thursday, November 23, 2023 4:11:24 PM	421.2kB	Available
7	Thursday, November 23, 2023 4:17:32 PM	2.6MB	Available
8	Thursday, November 23, 2023 4:31:46 PM	5.4MB	Available
9	Wednesday, December 27, 2023 10:00:48 AM	4.2MB	Available
10	Thursday, December 28, 2023 12:24:24 PM	2.0MB	Available
11	Thursday, December 28, 2023 12:33:18 PM	3.2MB	Available
12	Thursday, December 28, 2023 1:34:00 PM	2.0MB	Available
13	Thursday, December 28, 2023 1:37:06 PM	1.1MB	Available
14	Friday, December 29, 2023 12:03:48 PM	8.3MB	Available
15	Date Unknown	1.5MB	Available
16	Thursday, April 4, 2024 1:34:54 PM	1.2MB	Available
17	Thursday, April 4, 2024 1:39:06 PM	768.5kB	Available

- To know where the flight logs are stored, inside QGroundControl click on the **Q icon** and open **Application Settings**.



- In **General** look for the **Application Load/Save Path** section, there it will show the log path.



19.4 Uploading flight logs on Aurelia Assist

1. Log in to the site using your account which you can find behind the door of the battery box.
<https://www.aurelia-aerospace.com/aalogin>



2. On the left side select **Flight Logs**, we can choose whether we want to upload a maintenance log (standard flight) or a flight log (for future review by our technical support).
3. At the top right click on **ADD LOG** and select **Add Flight log**.

The screenshot shows the AURELIA Aerospac dashboard. On the left, there's a sidebar with links: Dashboard, Flight Logs (which is selected and highlighted with a red box), Flight Checklist, User Manual, Notifications, and Weather Map. The main area has tabs for Flight Logs and Maintenance Logs. In the Flight Logs tab, there's a table with columns: Flight #, Flight Date, Start Time, End Time, Flight Time, Pilot, and Notes. One row is visible with values: 900, 08 Aug 2024, 03:37 PM, 04:05 PM, 00:28:00, h. To the right of the table is a 'ADD LOG' button with a dropdown menu. An arrow points to the 'Add Flight Log' option in the dropdown.

- Fill in the required fields such as start and end time of the flight, pilot's name, flight purpose, flight location, notes, and optionally check any of the options of observations or flags if applicable.

Add flight log

The form has sections for Flight details, Pilot, and Flight purpose. The Start time is set to 10/21/2024 03:04 PM and the End time is set to 10/21/2024 03:09 PM. The Total Flight Time of Flight is 00:05:00. The Pilot name is listed as 'Pilot name' and the Flight purpose is 'Test flight'.

- Then **drag and drop or browse** in your computer the log(s) you want to upload, when finished click **SAVE**.

The Notes section contains a text area with the placeholder 'Notes' and a large blue 'P' icon. Below it is a 'Drag & Drop files or Browse' button with a '+ Copy' link.

The Upload files section shows a file named '2024-10-21 15-04-47.bin' with a delete icon. Below it is a 'Drag & Drop files or Browse' button.

The second Upload files section has a 'Drag & Drop files or Browse' button.

Flight #	Flight Date	Start Time	End Time	Flight Time	Pilot	Notes	
985	20 Oct 2024	03:04 PM	03:09 PM	00:05:00	Pilot name	-	
900	08 Aug 2024	03:37 PM	04:05 PM	00:28:00	h		

6. If you want to delete an entry, open it and scroll down to the bottom, click **REMOVE**.

19.4.1 Maintenance log

The maintenance log is a section where pilots can keep a general register of their Aurelia, i.e., if maintenance is required, when maintenance has been performed, etc. These logs can be linked to a previously uploaded flight log.

1. To add a maintenance log, in **ADD** select **Add Maintenance Log** instead of Add Flight Log.
2. Fill in the required fields such as if this entry is related to a previously uploaded flight log, if yes then in the next text box select the log, if no then select the drone corresponding to the current entry, and the comments of the entry.
3. When finished click on **EDIT**.

Add maintenance log

Do you want to register any maintenance logs related to an already recorded flight?

 Yes

 No

Please select flight log / Select Drone.

 Search Flight log / Drone

Comments *

 input text

20. Maintenance

20.1 Preventive Maintenance

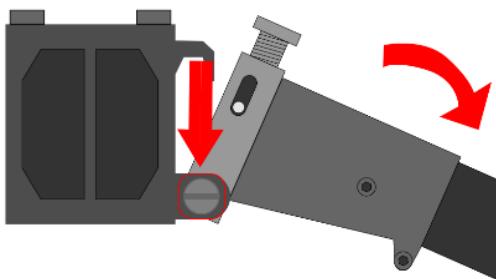
1. Drone care must be a priority for the pilot, preventive maintenance must be performed to ensure the performance of the Aurelia.
2. The Aurelia must be transported in its travel case, or in a similar case which provides the same immobilization, stability and protection against dust, moisture or foreign-objects.
3. It may be necessary to lift and carry the Aurelia from one location to another in the field, folding arms and propellers to avoid damage or injury.
4. The Aurelia should be cleaned regularly from dust and debris accumulated during missions. **Use the cleaning cloth and spray included in the flight kit.**
5. Don't use the Aurelia in excessively dusty or sandy conditions, if necessary, use a landing pad to limit the dust created during take-off and landing.
6. During standby periods, ensure that the Aurelia and batteries are not exposed to full sunlight and that the motors are covered to protect them from dust, dirt or damage.
7. If you are near the coast, limit the Aurelia's exposure to sea air when not in use.

20.1.1 Arms

- a. Lift the arm and let it drop, make sure it doesn't drop too fast, it should be slightly tight so it doesn't happen.

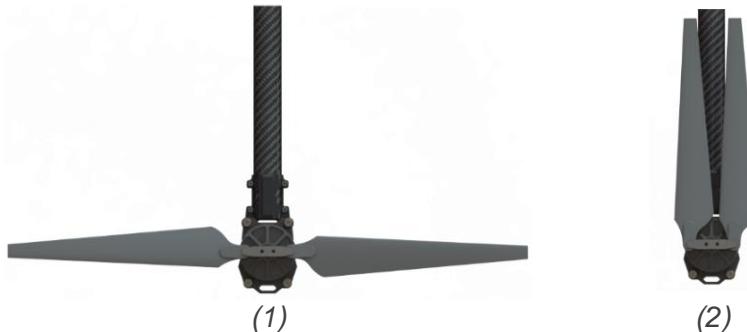
If necessary, tighten the screws with a torque wrench.

Aurelia	Torque
X4 Standard	16 lb/in
X6 Standard, X6 MAX, X6 Pro V1/V2, X8 Standard, X8 MAX, X8 Pro	40 lb/in



20.1.2 Propellers

- a. Use the Spray and Cloth from the Flight Kit to clean the propellers and the airframe of the Aurelia after every flight. The cloth must also be cleaned regularly.
- b. Unfold the propellers to 180 degrees when flying (1) and fold them when they are no longer in use (2). Use the propeller protection guard to secure the propeller in place.



- c. Make sure that the screws connecting the base propeller to the motor are tightened properly. **If necessary, tighten the screws with a torque wrench to 16 lb/in.** See image for reference.



If the screws that hold the propellers to their base are loose, it is necessary to tighten them by hand and very carefully, they have to be just a little tightened so that they can have mobility when flying.

- d. After twelve months of use it is highly recommended to change the propellers as they are made of plastic and dry out over time.

20.1.3 Motors

- a. Make sure that the screws connecting the motor to the arm are tightened securely. **If necessary, tighten the screws with a torque wrench to 16 lb/in.**
- b. Use compressed air to blow the inside of the motors to ensure that they are free of debris.
- c. Spin the motor slowly by hand to feel if there are vibrations or rough rotation which indicate bearing damage.
- d. Perform a motor test every 3 months to check that all motors are spinning at the same speed. Set the duration to 2 sec and don't change it, start with a throttle percentage of 10% and increase by 10 until you reach 80%.



For security, perform the motor test without propellers.

- e. After 1500 hours of use it is highly recommended to change the motors and ESCs.

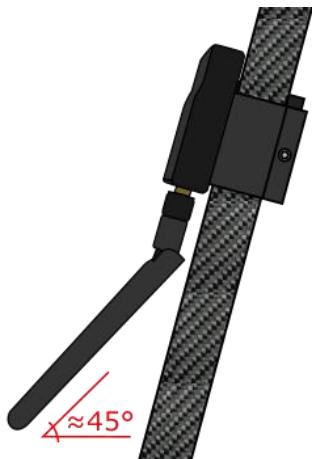
20.1.4 Telemetry Antennas

The 3DR telemetry radio in the Aurelia X4 and X6 models is placed in a landing gear tube, unless they have RLG, then it goes in the battery box.

The RFD900x telemetry radio, Herelink, H16 and UXV air unit antennas are placed in the battery box.

Check the following images for reference in order to position your antennas:

Aurelia X4 & X6 // *Telemetry Radio 3DR*

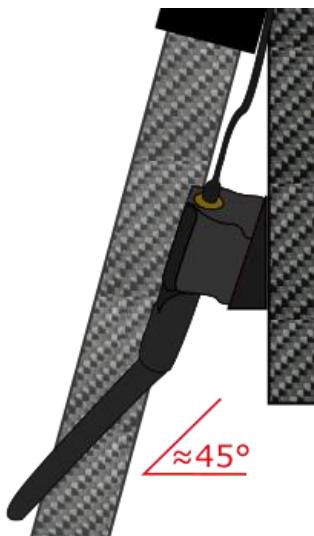
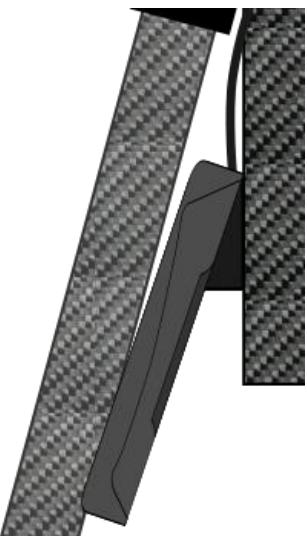


Aurelia X8, X6 MAX, X6 Pro V1, X6 Pro V2, X8 MAX, X8 Pro

- *Telemetry Radio 3DR*
- *Telemetry Radio RFD900x*



- *Herelink airunit antennas*
- *Skydroid H16 & Microhard airunit antennas*



20.1.5 Landing gear

If your Aurelia is an X4 Standard or X6 Standard with or without XL leg extension, then the landing gear consists of two upper pipes and two bottom pipes. If your Aurelia is any of the other models then the landing gear consists of four upper pipes and 2 bottom pipes.

In both cases it is important to make sure that the screws on the T-piece that joins the tubes are properly tightened. Since after several landings these screws may loosen, you should check them before flying so that your landing isn't affected.

After each landing, the 3D prints of the legs have to be checked to make sure they are in good conditions and not loose.

20.1.6 Screws

It is important to check the screws every 3 months to ensure that they are in good condition and tightened securely.

We mostly use hex head screws for the frame, arms and legs; in your Aurelia you can find a removable kit of three hex keys which you can use to tighten them.

When you are checking the screws, be careful in order to avoid stripped heads so there are no problems in the future.

20.1.7 Compass Mast

The Aurelia has a mast where the compass is placed, this must be checked and tightened before each flight, it needs to be at 90 degrees of the frame and not loose; remember that you can loosen and fold it for easy transport and storage.

20.1.8 Transmitter

- It is important to regularly check if the sticks return correctly to the center, to do this go to the screen where the PWM of each channel is shown, move the sticks to the edges and release them, confirm that they return to 0 or neutral.

- Always fully charge the transmitter before your flights, it is not recommended to go below 20% battery.
- If your transmitter's antennas can be removed for easy transport, remember to handle them carefully and always replace them before powering up.

20.2 Corrective Maintenance

This section describes the required maintenance if one of the following events take place.

20.2.1 Hard Landing

In the event of a forced or hard landing, it is essential to check the status and integrity of the following:

- Airframe
- Battery(ies)
- Propeller blades
- Engine internals, that no debris or similar has entered it
- Landing gear
- Payload

20.2.2 Propellers

If any one of the propellers touch the ground or any object while spinning, it is essential to check the following points for damage:

- Propeller assembly
- Propeller blades
 - Bend the blade slightly to check for micro fractures near the hub
 - Run fingers along leading edge of blade to check for damage
- Motor bases



If the propeller has suffered a cut or damage of any gravity, it must be replaced, as this could cause the damaged propeller to break during flight.

20.2.3 Test Flight

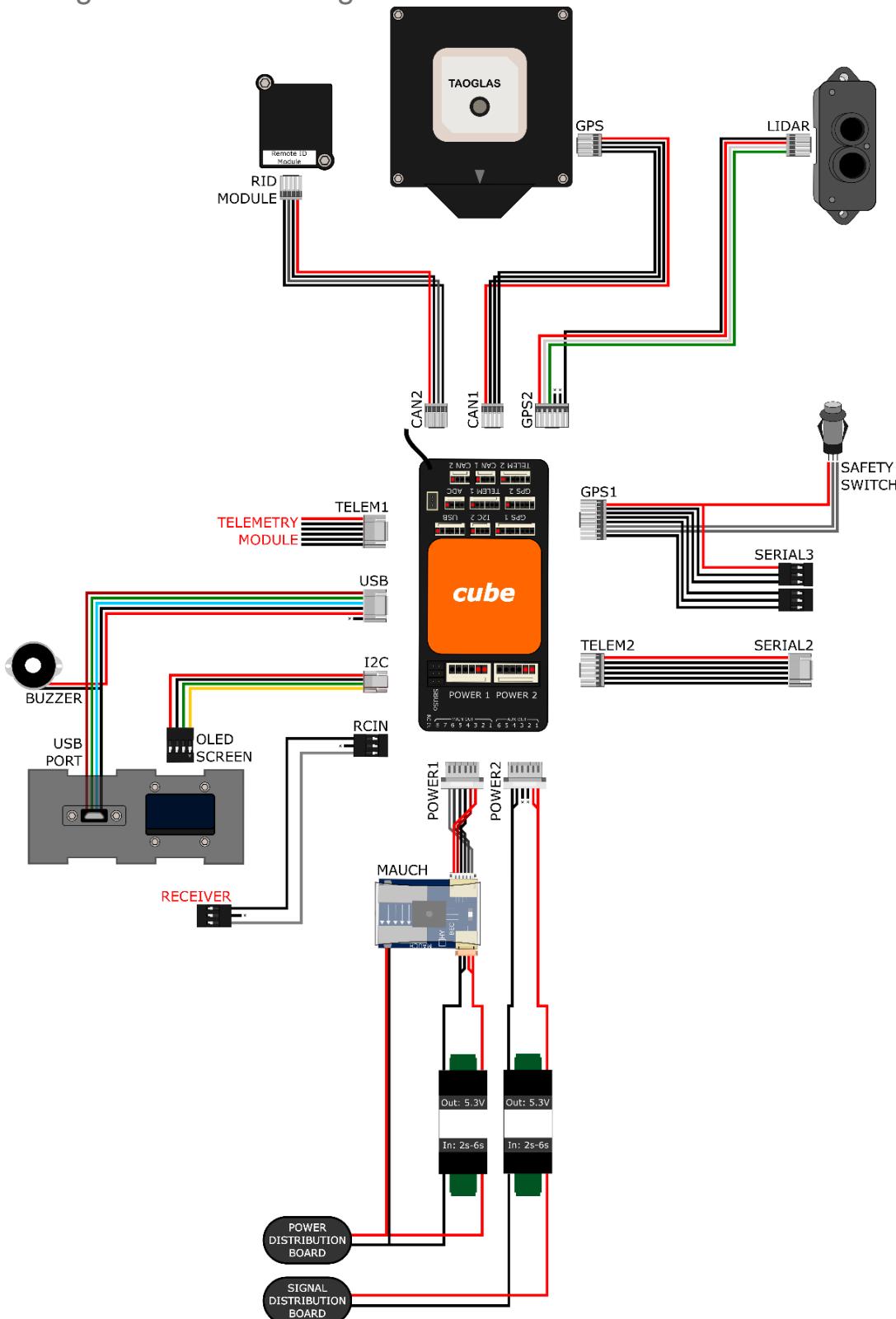
After any repair work, alteration, firmware upgrade or corrective maintenance, a test flight should be performed to ensure the Aurelia's behavior.

We recommend recording a video of all test flights to have a record of any undesired behavior, this will be very useful when reviewing your test.

If something unexpected happens, if the behavior of the Aurelia is not as desired or if you do not know how to perform any step, please [contact us](#) (page 113).

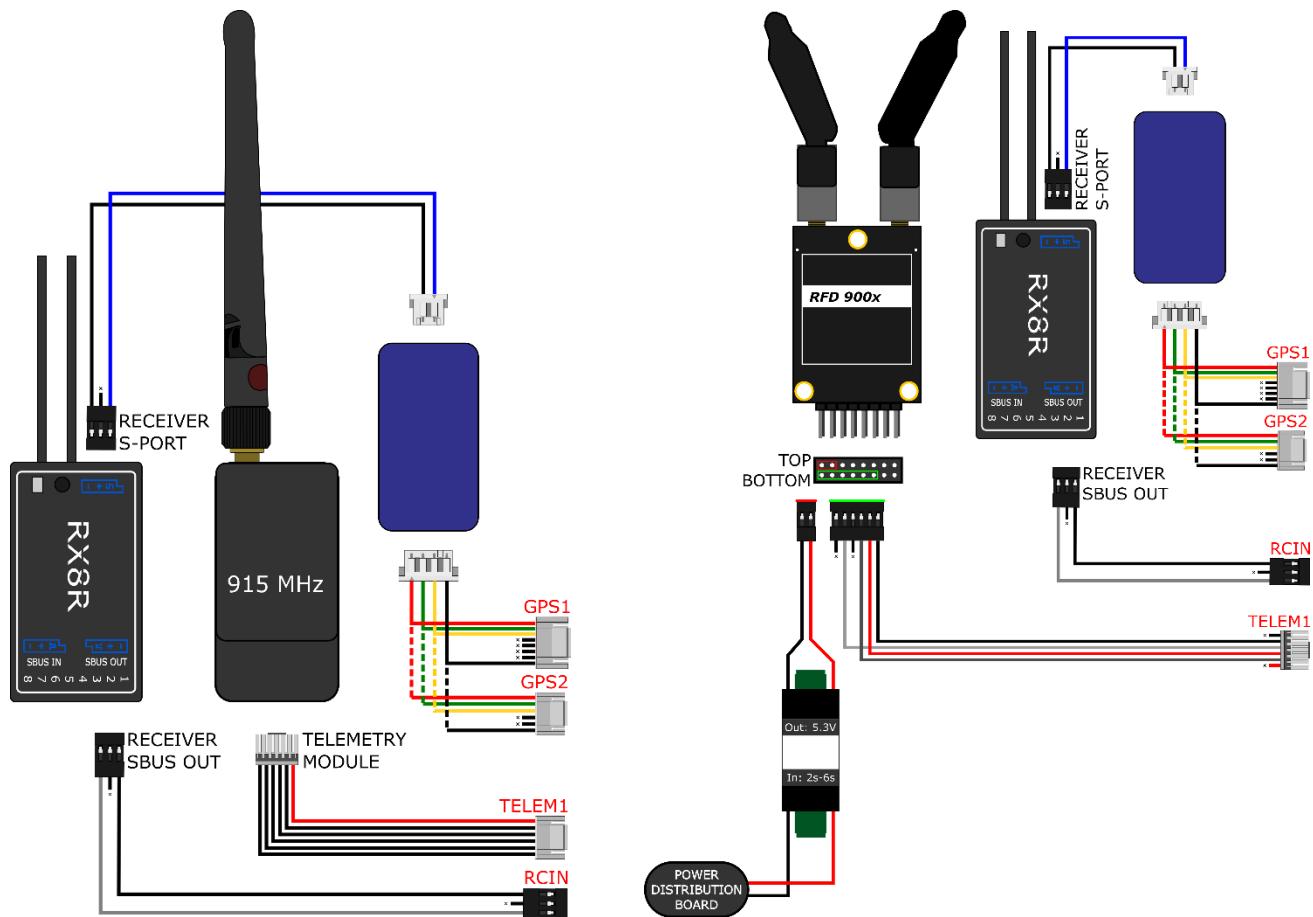
21. Appendix

21.1 Drawing of electrical wiring

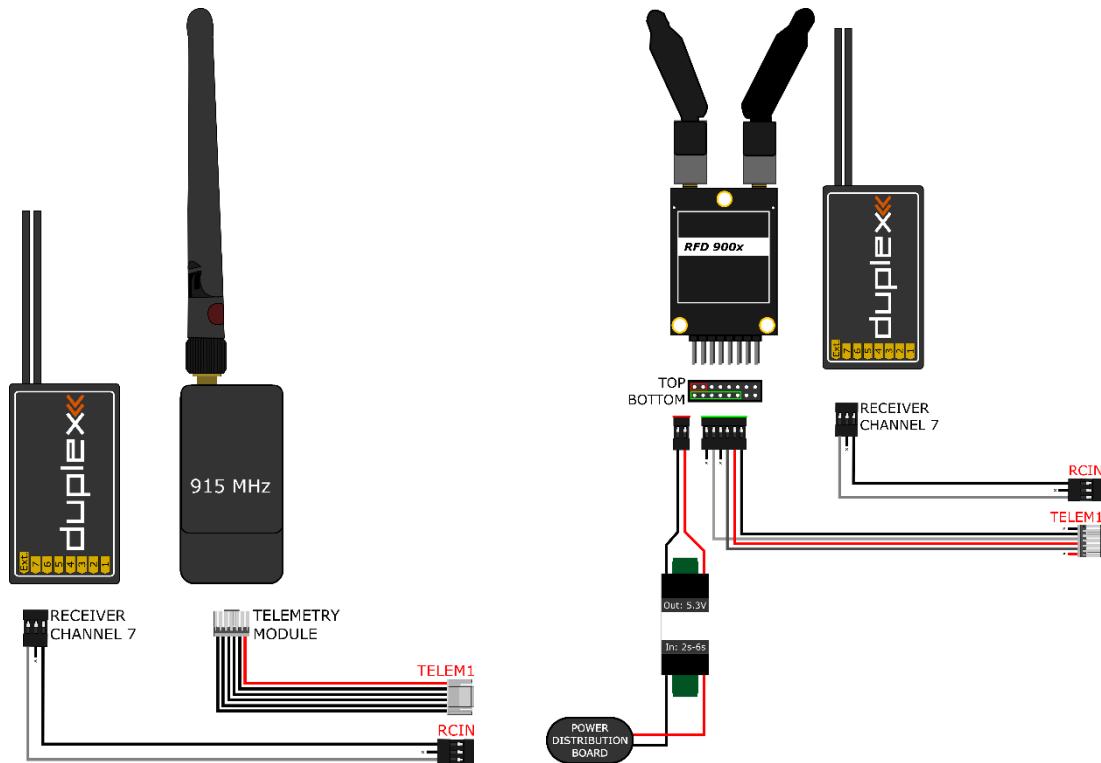


21.2 Telemetry and receiver wiring drawing

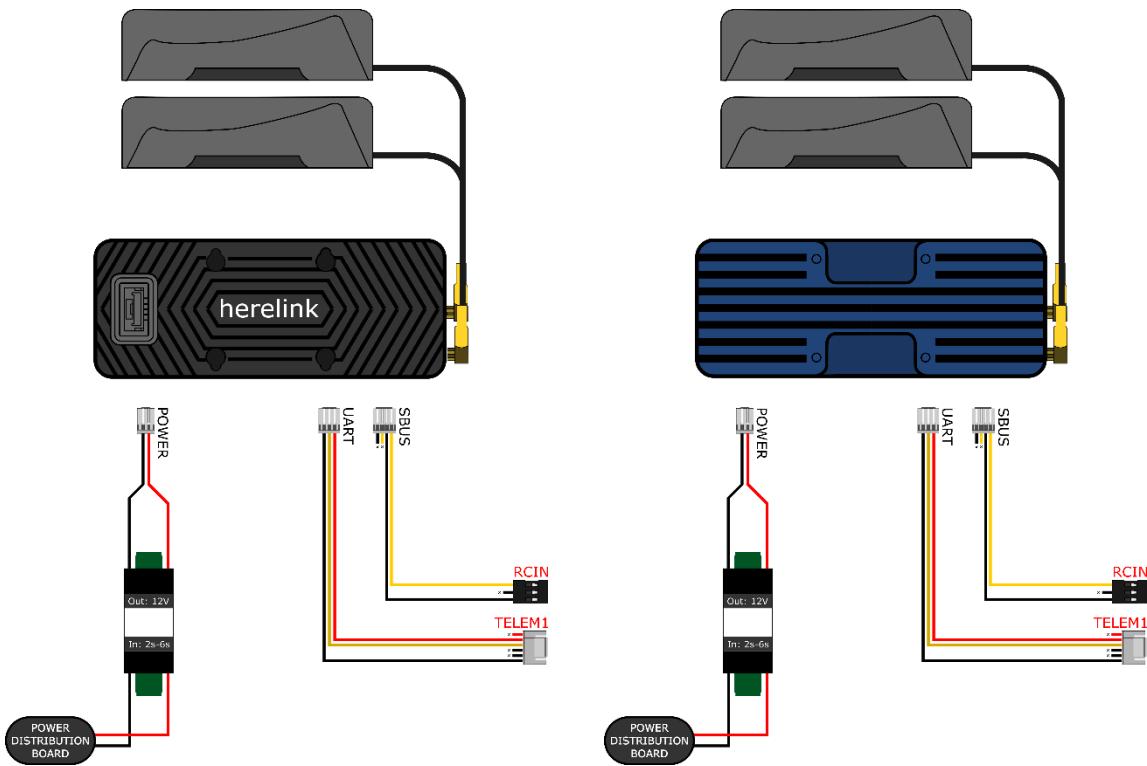
21.2.1 Telemetry radio and RX8R Receiver



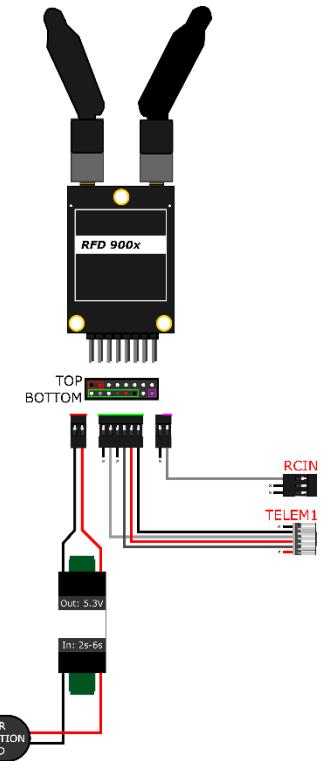
21.2.2 Telemetry radio and REX7 Receiver



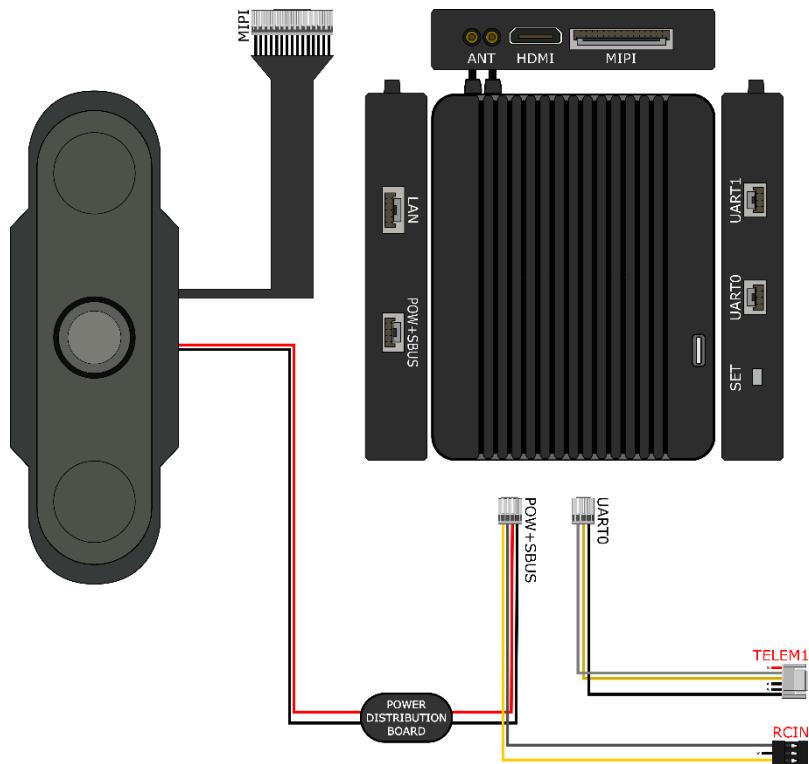
21.2.3 Herelink Black & Blue



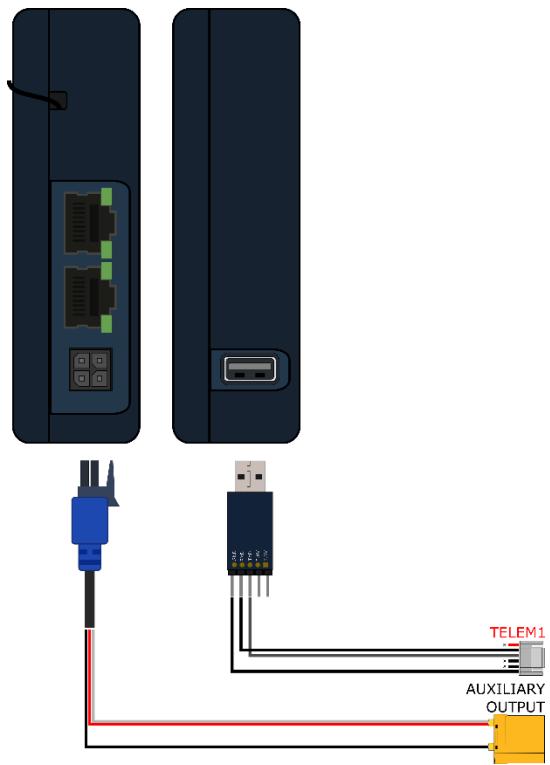
21.2.4 Telemetry RFD TxMOD



21.2.5 Skydroid H16



21.2.6 Microhard Radio



21.3 Trimestral Inspection

INSPECTION CHART		1 Month	3 Months	6 Months	9 Months	12 Months	15 Months	18 Months
Check tightness and status of the screws from the:	Propellers							
	Motor cover							
	Motor to the base							
	Motor base to arm							
	Arm to frame							
	Frame							
Perform a:	Motor test without Propellers							
Check the health of the:	Telemetry, Receiver and RID Antennas							
	Propellers							
	Landing gear							
	Battery(ies)							

21.4 Preflight Check List

FLIGHT DATE

- 1) Check weather report. Pay attention to visibility, wind speed and sunrise/sunset times
- 2) Plan your flight route
- 3) Inspect Aurelia airframe, components, motors and propellers for damage
- 4) Take your Aurelia to the field and place it in the take-off area
- 5) Battery(ies) fully charged
- 6) Transmitter fully charged
- 7) Secure the battery(ies)
- 8) Balance the batteries and payload
- 9) Retracting landing gear deployed (if applicable)
- 10) Camera / Strobe Light turned On (if applicable)
- 11) Release the pin to lock the arms in position
- 12) Check propellers rotation (CW/CCW) and fully unfold them
- 13) Propellers screws tightened (from propeller base to the motor)
- 14) Compass mast secured and pointing forwards
- 15) Turn on transmitter and Ground Station
- 16) Connect the battery(ies)
- 17) Connect to the Ground Station wirelessly
- 18) Check telemetry link stable
- 19) Check GPS Status (more than 10 sats and HDOP below 1)
- 20) All motors beeping
- 21) No unusual Pre-arm messages
- 22) Select an armable flight mode (Loiter recommended)
- 23) Press the Safety switch
- 24) Arm the Aurelia
- 25) All motors spinning at the same speed
- 26) Take off

21.5 Postflight Check List

FLIGHT DATE											
1) Land and disarm the Aurelia											
2) All motor stop spinning											
3) Press the Safety switch											
4) Disconnect and remove battery(ies) from Aurelia											
5) Store battery(ies) in LiPo Safety Bag(s)											
6) Camera / Strobe Light turned off (if applicable)											
7) Turn off transmitter and Ground Station											
8) Check Aurelia airframe, components, motors and propellers for damage											
9) Secure Propellers with propeller mounts											
10) Press the pin to unlock the arms and fold them up											
11) Note any relevant comments about the flight											
12) Store the Aurelia in a safe and dry location											



22. Contact Us

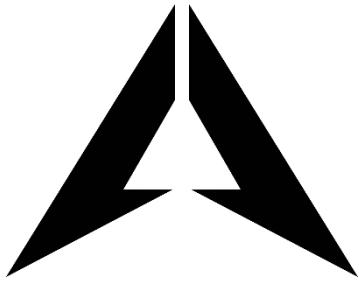
For support, contact us through our website:

<https://www.Aurelia-aerospace.com>

support@Aurelia-aerospace.com

Or give us a call:

Phone: +1 (833) 924 2376



23. Product liability Disclaimer

Terms of use, warranty and liability waiver

Aurelia Technologies Inc. offers its products with the terms, conditions and notices as follows. The following terms and conditions apply to all sales and uses.

Please review carefully. These terms and conditions include limited warranties and disclaimers of liabilities. Keeping, using or allowing use of Aurelia Technologies Inc.'s products indicate your agreement to these terms. If you do not wish to agree to these terms, you have 30 days from the date of purchase to return the unused product.

23.1 Terms of use

This product is offered to you conditioned upon your acceptance without modification of the terms, conditions, and notices contained herein.

23.2 Exclusive Obligation

This product has been designed for a variety of uses, but was neither designed nor manufactured as a product for lethal purposes. This product may not be used for unlawful purposes and that use is expressly prohibited under the terms and conditions of its use.

23.3 Use limitation

You may not modify, copy, distribute, transmit, display, perform, reproduce, publish, license, create derivative works from, transfer, or sell, any information, software, products or services obtained, from Aurelia Technologies Inc.'s website or its products.

23.4 Limited Replacement Warranty

This product is warranted against any manufactured defect for a period of six months from date of receipt.

23.5 High Risk Activity

Products sold by Aurelia Technologies Inc. include equipment used in extreme activity. Participation in this activity is associated with a high level of risk.

Risks include but are not limited to serious physical injury, disability and/or death. You participate in this activity at your own risk.

23.6 Assumption of Risk

By buying, using, or allowing the use of Aurelia Technologies Inc.'s products, you understand and agree that extreme activities including the use of this drone are high risk activities and, to the extent permitted by law, YOU EXPRESSLY AND VOLUNTARILY ASSUME THE RISK OF DEATH OR OTHER PERSONAL INJURY SUSTAINED WHILE PARTICIPATING IN SUCH ACTIVITIES WHETHER OR NOT CAUSED BY THE NEGLIGENCE OR OTHER FAULT OF Aurelia Technologies Inc. including but not limited to equipment malfunction from whatever cause, or any other fault of Aurelia Technologies Inc.

Additionally, you agree to indemnify, defend, and hold Aurelia Technologies Inc. harmless from any third-party claims arising from such High-Risk Activities or any other Aurelia Technologies Inc.

23.7 Equipment Modification

Modification of equipment, such as drones, through the use or misuse of Aurelia Technologies Inc. products can lead to equipment malfunction causing serious risk. Risks include but are not limited to

equipment damage, serious physical injury, disability and/or death. You are responsible for any modifications you perform on your or anyone else's equipment. Aurelia Technologies Inc. is not responsible and will not be held liable for any modifications done to equipment, such as UAV's, through the use or misuse of its product, even if the modifications include but are not limited to, bypassing or eliminating equipment safety features, installing parts that go against the equipment manufacturer safety regulation and standards, and/or improper installation and adjustment of Aurelia Technologies Inc. products.

23.8 Limitation of Liability

As set forth above under the limited warranty provisions, Aurelia Technologies Inc. liability is limited to repair or replacement of its products which are returned to it in the specified period of time. In no event shall Aurelia Technologies Inc. liability exceed the value of the product(s) sold. In no event shall Aurelia Technologies Inc. be liable for any direct, indirect, punitive, incidental, special or consequential damages whatsoever arising out of or connected with the use or misuse of any of its products.

23.9 Warning

Use and misuse of products sold by Aurelia Technologies Inc. involves serious risks including injury, disability and death. Purchasers assume all risks. **Inspect Before Each Use**

This product must be inspected for use to ensure it has not been damaged in shipment. If damaged, do not use and immediately contact Aurelia Technologies Inc. for repair or replacement assistance.

23.10 Entire Obligation

The PRODUCT LIABILITY DISCLAIMER document states the entire obligation of Aurelia Technologies Inc. with respect to the products. If any part of this disclaimer is determined to be void, invalid, unenforceable or illegal, including, but not limited to the warranty disclaimers and liability disclaimers and liability limitations set forth above, then the invalid or unenforceable provision will be deemed superseded by a valid, enforceable provision that most closely matches the intent of the original provision and the remainder of the agreement shall remain in full force and effect.

23.11 Applicable Law

Your order from Aurelia Technologies Inc., and this disclaimer statement are governed by the laws of the state of Nevada, United States. You hereby consent to the exclusive jurisdiction and venue of the Nevada Supreme Court in all disputes arising out of or relating to the use of this product. Use of this product is unauthorized in any jurisdiction that does not give effect to all provisions of these terms and conditions, including without limitation this paragraph.

23.12 Modification of Terms and Conditions

Aurelia Technologies Inc. reserves the right to change the terms, conditions, and notices under which its products are offered.

23.13 Six months Warranty

Your purchase comes with a standard 6 months warranty. This warranty does not cover misuse of the product, fly-always, or crashing the drone. It covers premature component failure on all components of the drone with no flight hour limits. All replaced parts must be returned to Aurelia Technologies Inc.