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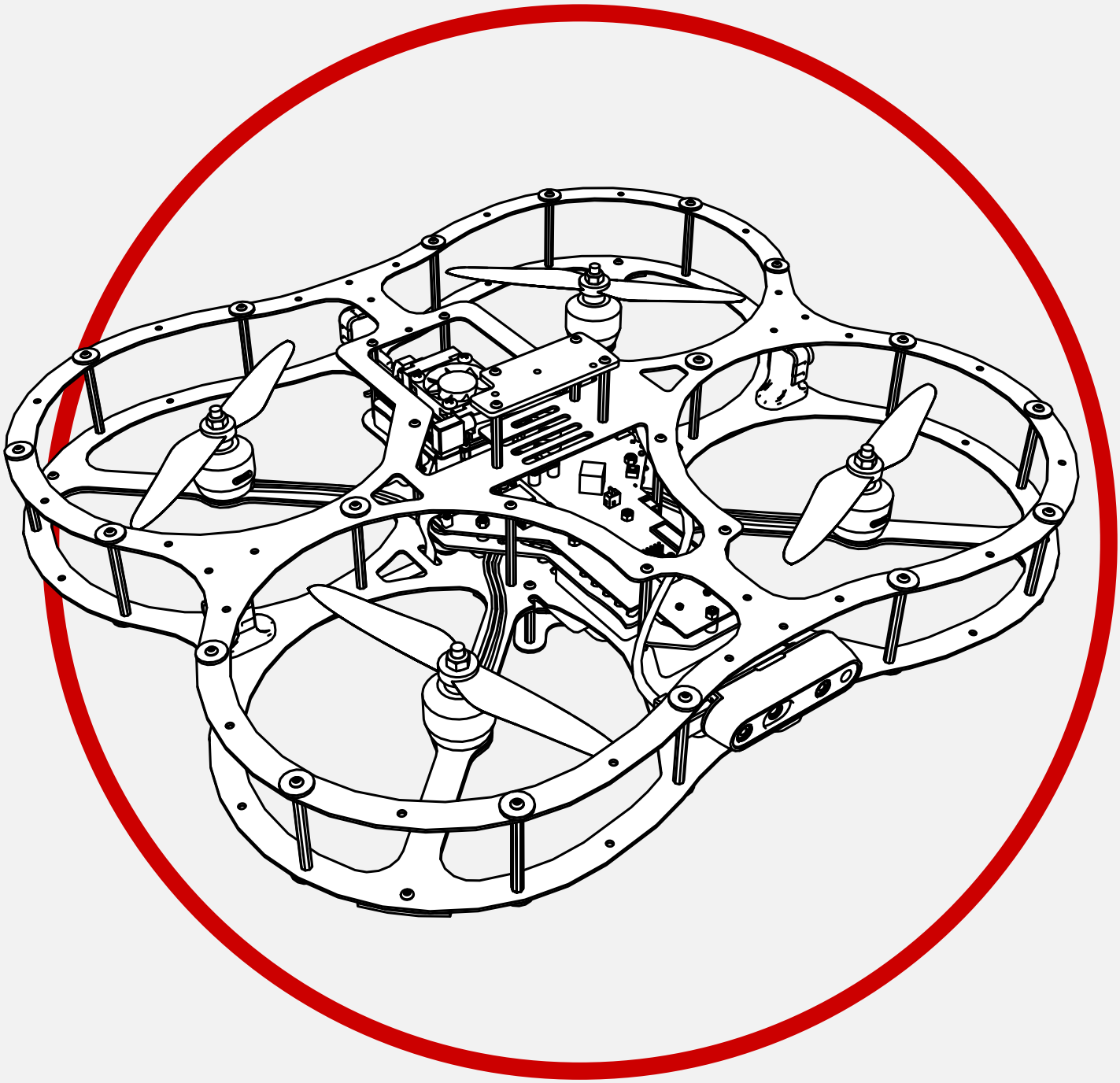

QDrone2

User Manual – Power

v 1.1 – 6*th February* 2025

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Caution

This equipment is designed to be used for educational and research purposes and is not intended for use by the public. The user is responsible for ensuring that the equipment will be used by technically qualified personnel only. **NOTE:** While the GPIO, and USB ports provides connections for external user devices, users are responsible for certifying any modifications or additions they make to the default configuration.

FCC Notice This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
Contains FCC ID: SQG-60SIPT

Industry Canada Notice This Class A digital apparatus complies with CAN ICES-3 (A). Cet appareil numérique de la classe A est conforme à la norme NMB-3 (A) du Canada.
Contains IC: 3147A-602230C

Waste Electrical and Electronic Equipment (WEEE)

This symbol indicates that waste products must be disposed of separately from municipal household waste, according to Directive 2012/19/EU of the European Parliament and the Council on waste electrical and electronic equipment (WEEE). All products at the end of their life cycle must be sent to a WEEE collection and recycling center. Proper WEEE disposal reduces the environmental impact and the risk to human health due to potentially hazardous substances used in such equipment. Your cooperation in proper WEEE disposal will contribute to the effective usage of natural resources.

CE Compliance CE

This product meets the essential requirements of applicable European Directives as follows:

- 2014/35/EU; Low-Voltage Directive (safety)
- 2014/30/EU; Electromagnetic Compatibility Directive (EMC)
- 2014/53/EU; Radio Equipment Directive (RED)

Warning: This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Caution

During flight QDrone 2 sound pressure level has been measured at 92 dBA at 1m away from the QDrone 2 and it is considered hazardous. Users shall ensure that they are not exposed to a sound level greater than the hazardous level as defined by the local authority. Use protective earpieces during operation.

Caution

The Intel RealSense D435 RGB-D camera is classified as a Class 1 Laser Product under the IEC 60825-1, Edition 3 (2014) internationally and EN 60825-1:2014+A11:2021 in Europe. The camera complies with FDA performance standards for laser products except for conformance with IEC 60825-1 Ed. 3 as described in Laser Notice No. 56, dated May 8, 2019.
Do not power on the product if any external damage is observed. Do not open or modify any portion of any laser product as it may cause the emissions to exceed Class 1. Invisible laser radiation when opened. Do not look directly at the transmitting laser through optical instruments such as a magnifying glass or microscope. Do not update laser product firmware unless instructed by Quanser.

Regular maintenance of QDrone 2:

- Inspect the propellers before flight to confirm they are not damaged or loose (able to move while the motor is not moving).
- Prior to using the QDrone 2, visually inspect the LiPo battery for damage (e.g., bloating). **DO NOT USE** the battery if damaged.
- Ensure that the battery and its cables are secured using the provided straps to avoid movement or damage during flight.
- Inspect the QDrone 2 frame before and after each flight to confirm that no major structural damage exists. Repair if needed.

Table of Contents

A. Charging the battery

1. Power the battery charger (Figure 1a) with the supplied power cable (Figure 1b).
2. Connect the balancer cable on the battery to the charger's right port (Figure 1c).
3. Charging will start automatically. Charging is complete when the fourth LED is illuminated. A full charge takes approximately 50 minutes.
4. After charging is complete, unplug AC power first. Then disconnect the battery from the charger.

a. charger/balancer

b. Power cable

c. connections to charger

Figure 1. Wiring and using the RC battery charger/balancer

B. Connecting the Battery

Insert a fully charged battery into the battery compartment on the QDrone 2 (Figure 2) all the way to the hard stop marked with a red circle at the bottom of the image. Make sure that the long cables that have the XT-60 connector go to the top left so that you can connect it plug it in, **Tighten the battery with the velcro**. It is generally good practice to hide the 5-pin connector under the battery, so it is not dangling while in flight.

> **Note:** Ensure that the velcro strap is tight and that the battery is secured in place.

Connect the XT-60 connector on the battery to the XT-60 connector on the tail at the bottom of the drone (Figure 2).

> ⚠ **Caution:** Leaving the QDrone 2 powered on with the battery connected will continue to drain power below the minimum voltage threshold of 13.3V **and may permanently damage the battery**.

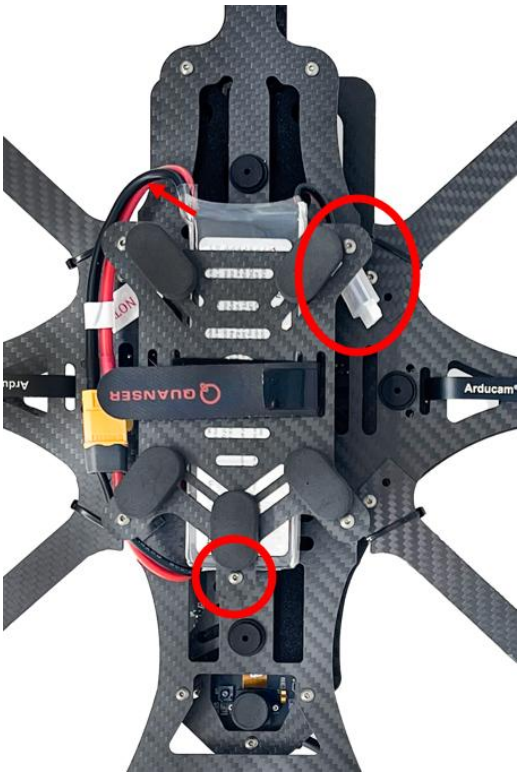


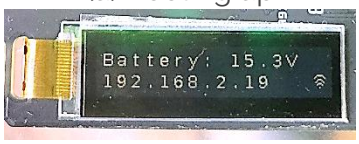
Figure 2. Battery setup

C. Turning ON and OFF the QDrone 2

Press and quickly release the red power button on the drone PCB to turn it on. It should be acknowledged by 3 beeps from the QDrone 2 as the drone's computer boots. The LCD on the QDrone 2 should turn on and it should show Figure 3a. Figure 2 shows the LCD display as the QDrone 2 is being turned on (3a), as it starts (3b) and gets an IP address (3c) and what happens after the button is pressed for power off (3d).

(a) Booting up

(b) Started



(c) Connected

(d) Powering off

Figure 3: QDrone 2 boot and power off

Note: Turn off the QDrone 2 by using the red power button. Only press once quickly and release, LCD should show Figure 3d. Do not keep the red button pressed to turn it off as it could cause issues. Disconnect the XT-60 battery cable whenever the QDrone 2 is not in use.

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