

Rotorflight dongle: how to use it

LockDownRadioControl · messiter.com/rotorflight

The dongle lets the free **RXV2 app (LockDownRadioControl)** talk to the Rotorflight brain in your **helicopter**. You set up and tune the model from your phone, in plain English. Your own radio and receiver keep flying the model. Nothing about them changes.

Blades off, or motor unplugged, before you touch anything in the app. Setting up is done on the bench, never with the rotor turning.

Power. The dongle takes its 5 V from the flight controller through its four-wire lead. Never feed it from anything else, and never plug a phone charger, power bank or computer into the dongle's USB-C socket: that socket is only ever for the short cable to the flight controller. Two supplies meeting through that cable can damage the flight controller or the dongle.

YOU NEED

- The dongle, ready to go: its four-wire lead is already soldered on and ends in the plug that fits a Nexus-X port. Its name is written on it.
- A short USB-C cable, USB-C at both ends — a Chenyang CY-UC-088-0.07M (70 mm, right-angled both ends) is ideal. It must be a **data** cable, not charge-only.
- A **Nexus-X port B or C** — not port A: that is usually the receiver's, and the receiver that flies the model needs it. Both are printed RX TX + – and give 5 V. **On any other flight controller read the port's four labels first:** the plug must land RX, TX, +, – in that order and + must be 5 V. 5 V on a signal pin, or more than 5 V on +, kills the dongle.
- The **RXV2** app, with Bluetooth on. Android: **messiter.com/apps** (Android asks once to allow installs from the browser; it updates itself after that, and asks for Bluetooth / Nearby devices permission the first time). iPhone: not on the App Store yet — email me and I will get it onto your phone.

GETTING GOING

- 1 **Plug in.** The lead into port B or C (that port needs no setting: it only powers the dongle), and the USB-C cable from the flight controller's USB socket to the dongle's. Blades off; power the model as usual.
- 2 **Open the RXV2 app and tap the dongle in the list** — it has the name written on it. If a card says *Welcome — let's set this receiver up*, give it a name (letters, digits, hyphens), leave WiFi blank, tap **Save and continue**; it restarts

GOOD TO KNOW

- **Back up first.** Backup & restore keeps a copy of every setting, so you can always go back.
- **Find a setting.** Tap the magnifying glass on any page and type a word, such as "cells" or "governor".
- **It goes quiet when you arm.** As soon as the flight controller reports armed, the dongle switches its Bluetooth off, so nothing can change in flight. Bluetooth comes back a moment after you disarm.
- **Leave it in the model.** It is tiny and updates itself through the app: when the app offers an update, tap **Update now** on the bench — over Bluetooth it takes a minute or two and needs the phone's internet.
- **Help is the ? top right of every page;** press and hold any underlined word. The firmware version is at the foot of every page — quote it if you email me.
- It has no radio of its own, so it does not fly or bind. **Setup** → **View channels** still shows the sticks, as the flight controller sees them.
- **It is a simulator interface too.** Choose that role in the app and the same dongle turns a receiver into a USB joystick for RealFlight or neXt on the computer — wiring at **messiter.com/rotorflight/dongle.html**
- Left in the background for three minutes, the app is disconnected: reconnect from the list.

IF SOMETHING IS WRONG

"Waiting for the flight controller"

By USB: a **data** cable, in the flight controller's USB socket;

and reappears under the new name — tap it again. From then on the app goes straight to it. The home page says *Flight controller connected*; tap **Rotorflight setup and Wizard**. Everything is there.

the model powered (the dongle has no power of its own); give it ten seconds. By the lead alone: plug the USB cable back in, open Ports and check the port your lead is in says “dongle on a wire”.

3 Later, by the lead alone (optional). With the USB cable still in: **Rotorflight setup and Wizard** → **À la carte** → **Ports**; beside the port your lead is in (B or C) choose *dongle on a wire (MSP, 115200)*, then **Save and restart the flight controller**. The lead is then the whole connection, for a dongle that lives in the model. Or, with the dongle's USB cable unplugged, in the Rotorflight Configurator: Ports tab, Configuration/MSP on for that port, 115200, Save and Reboot.

The dongle is not in the app's list	Power the model, wait ten seconds; on an iPhone pull the list down to scan again. Bluetooth must be on.
"Armed": the app refuses	The flight controller says it is armed. Disarm on your radio and try again.

If you like this, you will like the rest. The dongle is the little brother of the LockDown receiver, which does everything in this guide and flies the model — so with a LockDown receiver and transmitter there is no dongle to fit at all, and no spare port used up. The whole system is free and open source: roughly £35 of parts for a receiver, £120 for a transmitter. messiter.com/LDRC.html

Questions: Malcolm Messiter, mmessiter@gmail.com

Free and open source (GPL-3.0-or-later): github.com/Mmessiter/LDRC_V2 · More at messiter.com/rotorflight