

Firmware Flash and WiFi Connection

Reading time: ~10 minutes · Execution time: 15-20 minutes · Applies to: Controller, Doser, Fish Feeder, pH

This guide describes the firmware loading and WiFi connection process, which is the same for all JoyReef devices. Follow your device-specific guide for prerequisites, then come back here to complete the installation.

1. Load the firmware onto the device

What you need:

- A **computer** (Windows, macOS, or Linux) — not a phone
- **Google Chrome** or **Microsoft Edge** (Safari and Firefox **do not work** for this operation)
- The **micro-USB data cable** from the shopping list (must pass data, not just power)
- A **JoyReef account** already created at portal.joy-reef.com

Step 1: open the flash page

Open portal.joy-reef.com/usb-flash in Chrome or Edge.

You will see the list of **available firmware**: Controller, Doser, Fish Feeder, pH. Choose the one matching the device you are installing.

usb-flash-page

Step 2: connect the device to the computer

1. Take the **micro-USB data cable**
2. Connect one end to the **micro-USB port of the device** and the other to the **computer**
3. A **LED** will light up on the device (power indicator — this is normal)

Step 3: start the flash

1. Click the **"Install"** button next to your device's firmware
2. The browser opens a window to choose the **serial port**
3. Select your device's port — usually named **"USB-SERIAL CH340"** or **"Silicon Labs CP210x"**. If you see multiple ports, disconnect the USB cable, see which one disappears, reconnect and select it
4. Confirm **"Connect"**
5. The flash starts — it takes **about 2-3 minutes**, you will see a progress bar
6. When finished, the device **reboots by itself**

Missing USB driver? If the browser shows no serial port, on Windows or macOS you may need to install a driver. Search for "CH340 driver Windows" or "CP2102 driver macOS" (both free). On Linux it works without installing anything.

"Connection failed" error? Disconnect the USB cable, wait 5 seconds, reconnect and try again.

2. Verify that the flash was successful

A few seconds after the flash finishes, the device reboots. To check that everything went well, look for the WiFi network `joyreef-XXXXXX` in your phone or PC's network list within 20-30 seconds.

If the network appears, the flash was successful and the device is in setup mode. Move on to the next section.

If the `joyreef-XXXXXX` network does not appear after 30 seconds, disconnect the USB cable, wait 5 seconds, reconnect and try again. If the problem persists, repeat the flash from the beginning.

3. Connect the device to your home WiFi

Step 1: connect to the device's network

From your **phone** (or PC):

1. Go to **WiFi settings**
2. Look for the network `joyreef-XXXXXX` (same code you see in the device name during flash)
3. **Connect** — no password is usually required

"Internet not available"? This is normal. The device is not yet connected to the Internet. On Android confirm **"Stay connected"**, on iPhone **"Keep connection"**.

Disable mobile data before continuing: if your phone has both the device's network and mobile data active, it may prefer mobile data and fail to open the wizard correctly.

Step 2: open the configuration wizard

Many phones **automatically** open the wizard page (like hotel WiFi portals). **If it opens by itself, go directly to Step 3.**

Otherwise:

1. Open your phone's browser (Chrome, Safari, Edge — any works)

2. Type in the address bar: **192.168.4.1** and press Go

captive-portal

Step 3: fill out the wizard

The wizard has **3 screens**.

Screen 1 — Language and Timezone

- **Language:** English (or your preference)
- **Timezone:** choose your timezone

Screen 2 — Home WiFi

- **WiFi:** select your network from the list (must be **2.4 GHz**)
- **WiFi Password:** your network's password
- Press **Test connection** — if successful, the **Next** button appears

JoyReef devices only support 2.4 GHz WiFi (not 5 GHz). If your router combines both bands into a single network, temporarily disable the 5 GHz band from the router's settings during setup. You can re-enable it once the device is connected.

Screen 3 — JoyReef Credentials

- **Username:** the **email** of your JoyReef account
- **Password:** your JoyReef account password
- Press **Test connection** — if credentials are correct, **Save and Finish** appears

Step 4: save

Press **Save and Finish**. The device:

1. Saves settings to internal memory
2. Turns off the `joyreef-XXXXXX` network
3. Reboots and connects to your home WiFi

Your phone will automatically disconnect from the device's network. Reconnect to your home WiFi.

4. Verify that the device is online

Portal

1. Open portal.joy-reef.com and log in
2. Go to **Devices**

3. Your device appears in the list with the name `joyreef-XXXXXX` and a green **Online** badge

The first connection can take **up to 1-2 minutes**.

device-in-portal

If something goes wrong

Symptom	Probable cause	Solution
Device does not appear in list after 2 minutes	Wrong WiFi password or 5 GHz network	Repeat the wizard: hold the reset button for 8 seconds and start from Step 1 of this section
Device appears but shows Offline badge	WiFi ok but not talking to portal	Verify the router has Internet access. If yes, JoyReef credentials are wrong: reset and reconfigure
Device appears Online but disappears after a few minutes	Weak WiFi signal	Move the device closer to the router during first setup

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