

SCAN FOR THE
FULL GUIDE

Set up your Weather-Station Listener

It hears the AcuRite, La Crosse, Oregon and Ecowitt / Ambient sensors you already own on 433 or 915 MHz and sends every reading to a place you own, or into Home Assistant.

BEFORE YOU START

Have these on hand:

- An **ESP32** (classic, S3, C3, C6) with a **CC1101** radio module wired to it, or a Heltec V2 on its own radio, or a classic ESP32 with a bare 433 MHz receiver on GPIO 33.
- An **antenna** on the radio, cut for the band: 17.3 cm for 433 MHz, 8.2 cm for 915 MHz.
- Your station within range: tens of metres for a bare receiver, ~100 m line of sight for a CC1101.
- A computer with **Chrome** or **Edge** and a **data** USB cable.
- Your **Wi-Fi** and where the readings go — or nothing at all, if this will be a pod on a LoRa node.

FLASH IT (FIRST TIME ONLY)

- 1 Open openagriculturetechnology.com/build/sketches/weather-station-listener/, plug the board in, press the button that matches **your chip and where the radio is wired**. The page has the pin list for every row.

CONNECT TO THE NODE

- 2 **Power the node** with a USB cable (any USB charger or your computer).
- 3 **On your phone or laptop, join its Wi-Fi network** — it appears as **OAT-Setup-XXXXXX** (open, no password). A setup page opens by itself; if not, go to <http://192.168.4.1>.

Setup page address	http://192.168.4.1
Username	admin
Password	oatsetup (change it once the node is online)

FILL IN YOUR SETTINGS

Write yours here first, then type them into the setup page. One card per node.

Listener name

e.g. barn-wx

Farm ID

the same on every node you own

Location

Wi-Fi name (SSID)

2.4 GHz

Wi-Fi password

Webhook URL

[https:// ...](https://...) (or the Test Endpoint below)

Band (MHz)

433.92 AcuRite/La Crosse/Oregon ·
915.00 Ecowitt/Ambient (US)

Push interval (sec)

default 60

Delivery method

Webhook or MQTT (Home Assistant)

MQTT host / port

if using MQTT

Station allow-list

optional: ids from Stations heard

Station id (from Stations heard)

e.g. `acurite-5n1:748-A` — write it here

NO ENDPOINT YET? USE THE OAT TEST ENDPOINT

The listener appears under your Farm ID with each station and sensor beneath it.

Delivery method	Webhook
Webhook URL	https://iot-test.openagriculturetechnology.com/ingest
Watch it live	https://iot-test.openagriculturetechnology.com

It keeps roughly the last hour. Rain arrives as the station's running total; the endpoint does the daily subtraction.

INTO HOME ASSISTANT (MQTT)

Choose MQTT, point it at the Mosquitto broker Home Assistant uses, and the station becomes a device with one entity per reading — by discovery, no YAML.

MQTT host	the Home Assistant machine
Port	1883 plain · 8883 with TLS ticked
User / password	the broker's, if it has them
Then	Settings → Devices & Services → MQTT: rename the device; the id stays underneath

The guide at </home-assistant/weather-station/> has the dashboard cards and the frost, rain-hold and wind automations.

SAVE & CHECK THE DATA IS FLOWING

- 4 Press Save.** The node joins your Wi-Fi while the setup page waits, then shows its **address on your own network** — like `http://192.168.1.37` and `http://oat-yourname.local`. Bookmark one; that's the node's home page from now on.
- 5 Open Live Status** there and press **Send a test reading**. A green “OK” means a reading just reached your endpoint. That's the whole job done.

Updating later: The setup page's **Stations heard** lists every device with its id, model, signal and how long ago. A station broadcasts every 16–60 s; give it a minute. The neighbours' stations show too on a shared band: the allow-list keeps only yours.

THE USB CONSOLE

Open the install page, choose **Console**.

stations	every station and sensor heard, with signal and age.
set band 915.00	switch bands; the radio retunes at once (not on a bare receiver).
status	radio, front end, decode and skip counters, unmapped keys.
set lineout off	silence the oat-line output (on by default, for pod use).

IF SOMETHING'S NOT WORKING

Stations heard stays empty	Band must match the station: AcuRite, La Crosse, Oregon = 433.92 ; Ecowitt/Ambient (US) = 915.00 . Antenna cut for that band. Bring the station closer for the first test. Bare receiver: frames and bad-checksum counts on the setup page say whether pulses arrive.
The neighbour's station shows up	Expected on a shared band. Put your station's id in the allow-list.
Rain shows a small amount with no rain	Carrying the station tips the bucket; the total is the station's running count and only resets when its batteries are pulled. Your endpoint subtracts for the day.
Radio not found	CC1101: CSN on the right pin, MISO/MOSI not swapped, 3V3 not 5 V, wires under 15 cm.

Generated 2026-09-05 · This card and the firmware are open. The full sketch, the supported boards, and the web installer are at openagriculturetechnology.com/build/sketches/weather-station-listener/.