

Spiderplant Sensors

Adding alerts and other stuff

Chironja Lightning Talks
August 14, 2025



Occasionally misbehaving
water tank.

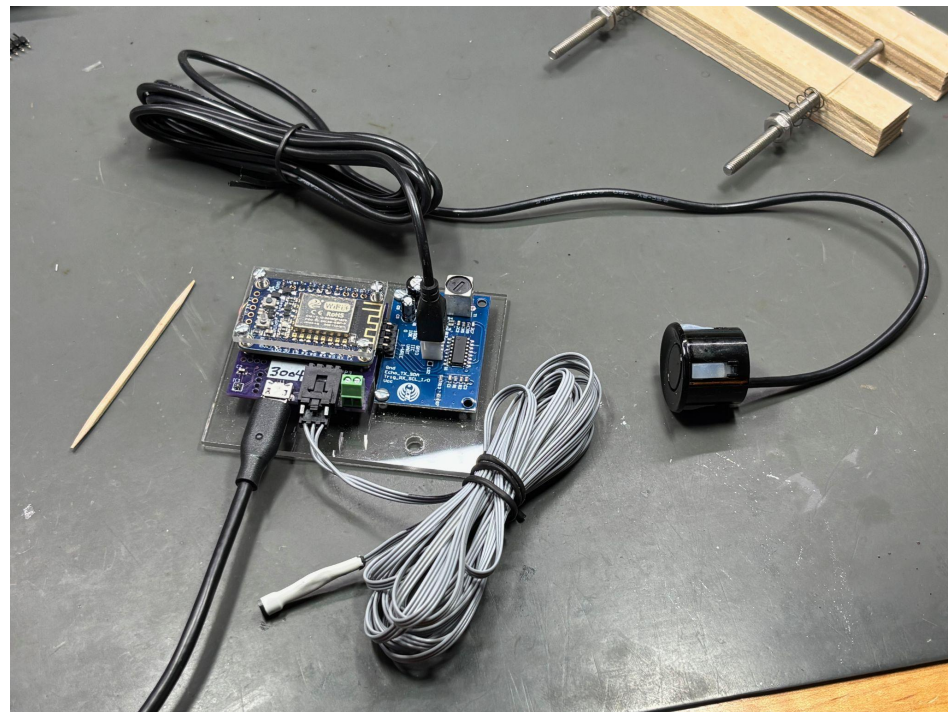
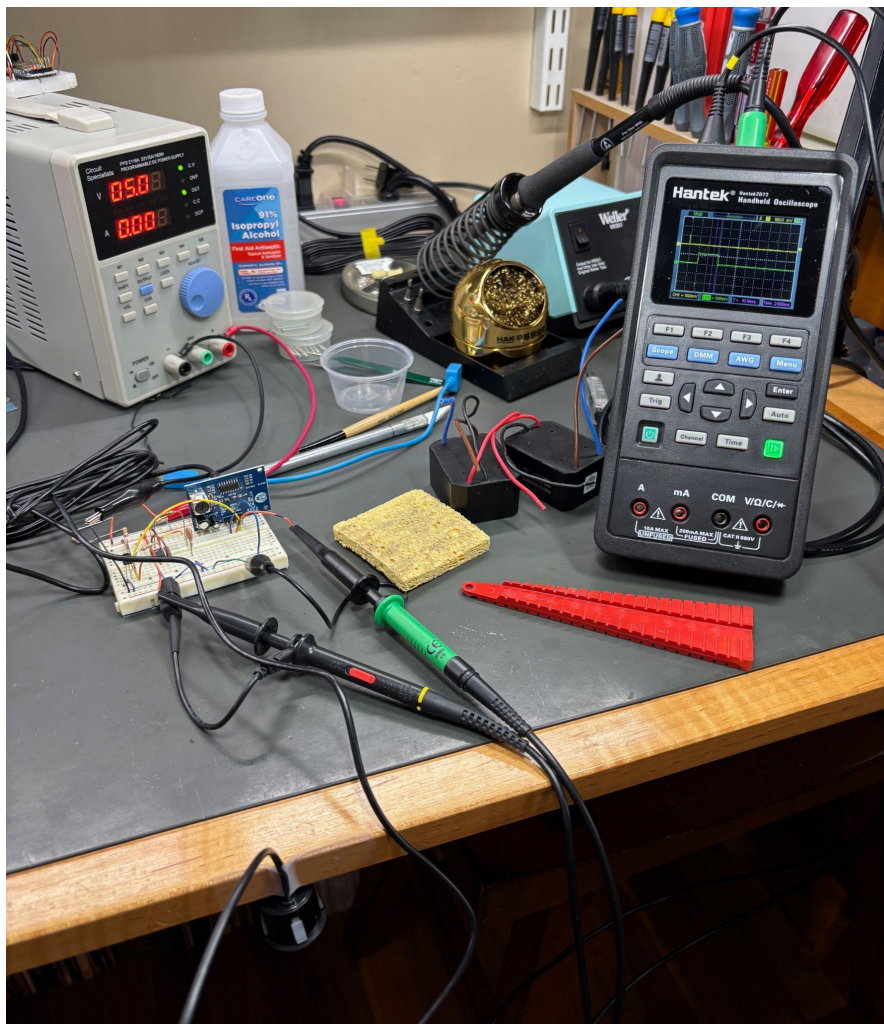


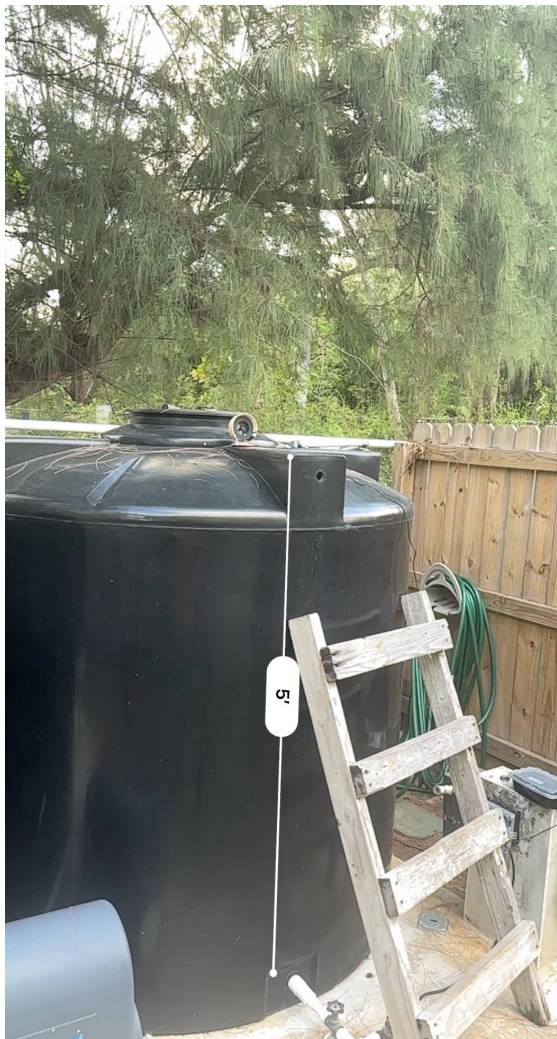
Freezers too.

So we got to thinking...



Ultrasonic water tank therm

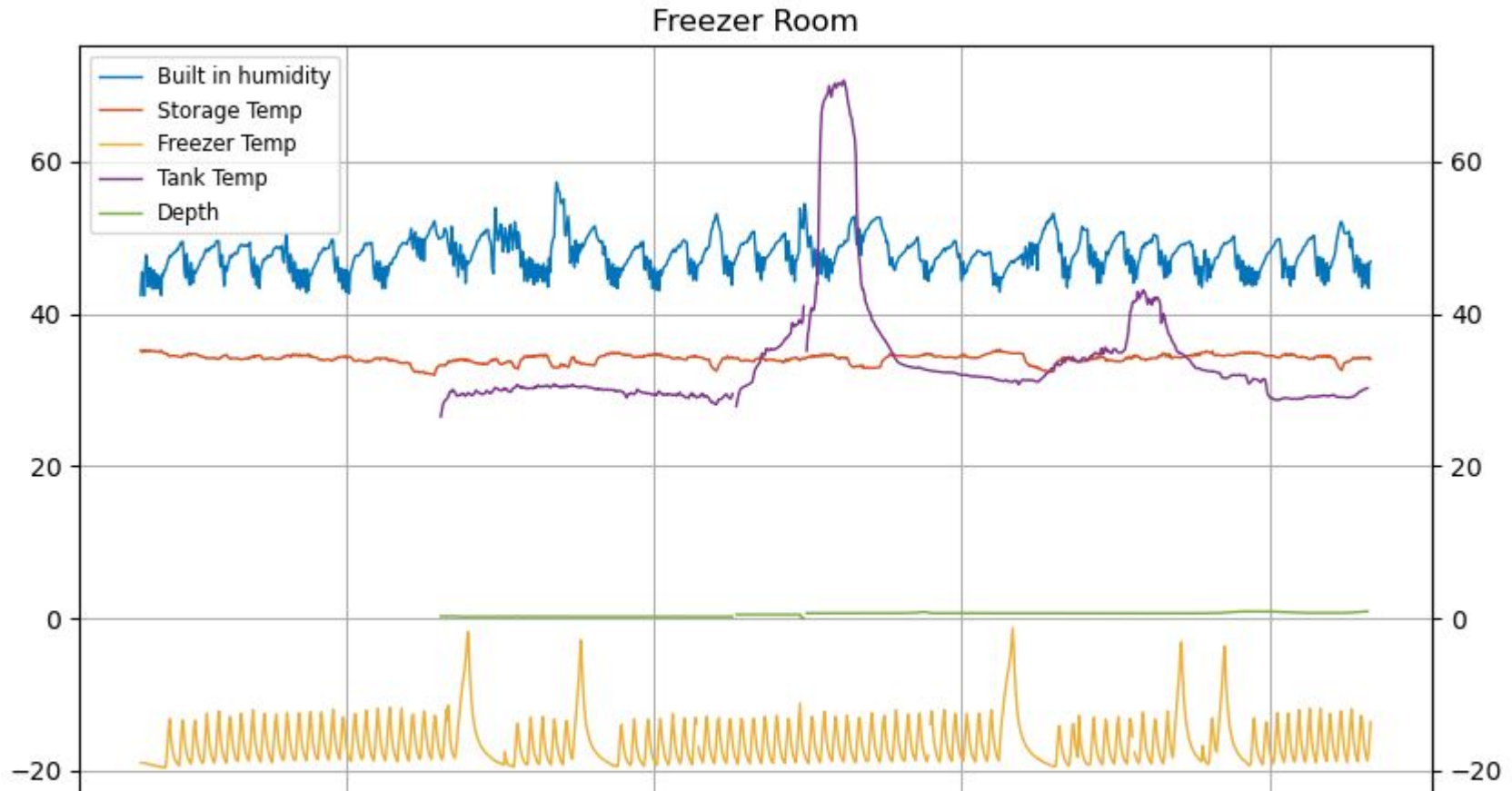








Now we can monitor everything!



What about alerts?

Spiderplant has nice graphs, but no alerts

Cloudflare has cron-like workers

Write a worker that checks the Spiderplant APIs and send alerts

And make a custom dashboard for my probes

<https://spider.dev.pr/probes>

Thermweb Probes

[Refresh](#)[FDM Graph](#)[FDM Tanks](#)

Total probes: 9

✓ All Systems Normal

Freezer temperature: -16.06°C (limit: -11°C)

Humidity level: 50.09% (limit: 55%)

Tank level: 40.8% (depth: 0.94)

Storage device: Online

Tanks device: Online

Tank Level: **40.8%**

Depth: 0.94 • 08/06/2025, 02:08:34 PM

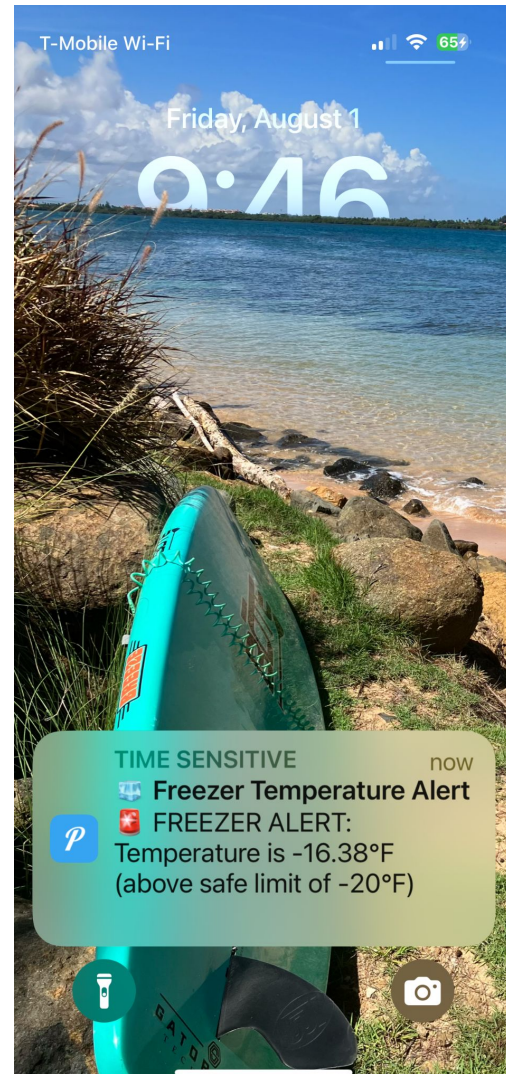


How to send alerts?

Pushover app

<https://pushover.net>

Cloudflare Worker just hits pushover api and ping!



Thanks to
Bob who
visited
recently
and
executed
the idea!



HTTPS Weirdness (What actually got me coding)

I sent a link to <http://lab.spiderplant.com/tw/open.html?viewname=FDM>

But my friend couldn't see it (http not https)

WhatsApp rewrote it or Safari wouldn't serve it, not sure...

So I started by just building a proxy at <https://spider.dev.pr>

Then I realized I could add alerts and my own dashboard

Now I want to integrate other stats in my dashboard...

Sensor & Microcontroller Parts List

Microcontroller:

- ESP8266 Huzzah (Adafruit) — \$10–\$15

Sensors:

- SHT40 Temp/Humidity Sensor — \$5–\$7
- DS18B20 One-Wire Temperature Probes — \$3–\$5 *each*
- Ultrasonic Sensor (e.g., HC-SR04) — \$2–\$4

Estimated Total:

\$23–\$41 depending on number of DS18B20 probes

How do we set the alert limits?

I could build a UI. But then I need a login, etc. Ugh.

Idea: Use Cloudflare KV instead. Just put the values into the KV. Easy to tune and adjust them in the Cloudflare UI or Wrangler CLI

● Current KV Threshold Values Confirmed:

Key	Value	Alert Condition	Tank Level
DEPTH_MAX_LEVEL	1.236	Tank Empty Alert	< 20% full (80% empty)
DEPTH_MIN_LEVEL	0.171	Tank Full Alert	> 95% full
FREEZER_MAX_TEMP	-11°C	Freezer Temperature Alert	> -11°C

Tank Alert Summary:

- **Empty Alert:** Triggers when depth > 1.236 (tank drops below 20% full)
- **Full Alert:** Triggers when depth < 0.171 (tank exceeds 95% full)
- **Normal Operating Range:** 20% - 95% full (depth between 0.171 and 1.236)

All values are confirmed and active in the KV store. The system will use these thresholds for monitoring and alerting.

Repeated alerts are annoying

Workers are stateless, so how can I keep the state between invocations?

I could use another KV. I told Claude I didn't want repeated alerts, just when the states transition from "alerting" to "normal" or vice versa.

Claude used Cloudflare Cache.

Surprise! It works.

I do get repeated alerts sometimes. If it becomes too annoying I'll add a KV entry instead.

Thanks!

Thanks to Bob Mancheck for making Spiderplant therms and ultrasonic depth sensors....

You can see all their public graphs here:

<http://lab.spiderplant.com/tw/open.html>

Or

<https://spider.dev.pr/tw/open.html>



FDMDepth

